v. 99, 2
65952

JULY, 1935

COTTON

Serving the

TEXTILE INDUSTRIES

We are proud of the part we have been allowed to play as engineers in the development of these textile properties.

ROBERT AND COMPANY
ATLANTA INCORPORATED GEORGIA
Architects and Engineers

If all the yarn that has been dyed by the Franklin Process Companies were wound into one huge package, the latter would be about 258 feet high and 182 feet in diameter, or approximately as high as a 22-story building.

126,000,000 LBS. OF EXPERIENCE

Ten years to gain GENERAL recognition as the most ECONOMICAL dyeing method for cotton yarn dyed fancies. Perhaps five years more to gain general acceptance as a superior QUALITY method also. Such was the early history of Franklin Process Custom Yarn Dyeing (first offered to the textile industry in 1910) and such are the trials of any new, revolutionary product or service.

Contrast this early history with today's situation. Franklin Process is now a time tested, national institution, handling a large percentage of the cotton custom yarn dyeing in the United States (as well as a large quantity of rayon and worsted yarn dyeing); a proven sales asset as well as a manufacturing asset. Franklin Process Colors are now ordered or specified by manufacturers or converters without question and without considering the reasons for their choice. That is the eventual fate of all great achievements. In time they are taken for granted, with little appreciation of what made them possible.

However as a safeguard against ill considered color buying, it behooves the textile industry to ponder briefly the secret of Franklin Process achievement. Is the secret a patented process? good management? exceptional technical skill? or good merchandising?

The answer to all of these questions is "Yes, partly," but the story is far from complete, without mentioning the most important factor of all,—EXPERIENCE. Franklin Process has had 126,000,000 lbs. of experience (its total production from 1910 to 1934 inclusive). But even this figure does not tell the whole story; it does not include the countless experimental dyeings made in our laboratories, the many tests with different types of metals in our dyeing machines, with different machine designs, and with different dyeing materials and methods.

Consider these facts when buying colored yarns or yarn dyeing, for such experience is not to be taken lightly. It can not be duplicated overnight. Great achievements are always born of experience. Therefore if you want the best in yarn dyeing service, look to—

Custom Yarn Dyeing
Natural Yarns Colored Yarns
Glazed Yarns
Dyeing and Processing Machines

THE COLORS YARNS IN THIS FABRIC ARE FRANKLIN PROCESS DYED FASTNESS TO WASHING AND LIGHT GUARANTEED UNCONDITIONALLY

When you pay for colors of KNOWN fastness, advertise the fact. Use the Franklin Process Fast Color Label. Ask us about it.

FRANKLIN PROCESS

ESTABLISHED 1910

Pioneers in Package Dyeing

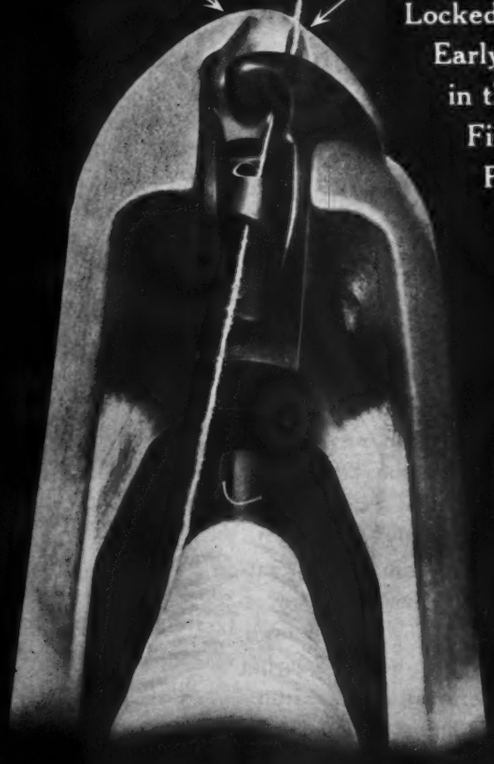
PROVIDENCE • PHILADELPHIA • GREENVILLE • CHATTANOOGA • N. Y. REPRESENTATIVE, 40 WORTH ST.

COTTON is published monthly by W. R. C. Smith Publishing Co., Dalton and Atlanta, Ga. Subscription Rates, United States and Possessions, $1.00 for one year; $2.00 for three years; Canada, $1.50 per year; Foreign Countries, $2.00 per year. Entered as second-class matter at the postoffice, Dalton, Ga. under the Act of March 3, 1879.

The New Stimpson Twin Groove Shuttle

Why the Twin Thread Track?

The Yarn Moves from This Track to This Track and is Locked in Early in the First Pick



Reduces Loom Stops from Misthreads Broken Filling and Fork Failures

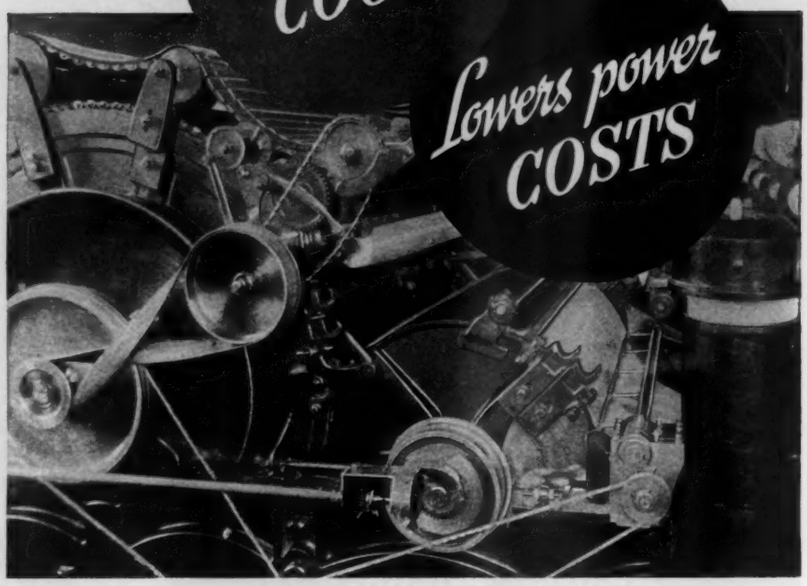
Use This New and Shuttle

Cut Down Your Loom Stops
Run More Looms per Weaver
Improve Quality of Your Fabrics
Increase Percentage of Production

DRAPER CORPORATION

Atlanta Georgia Hopedale Massachusetts Spartanburg S C

This NEW..*heat resisting*..*high speed* LUBRICANT



Ball and roller bearings can't travel fast enough to catch this new lubricant off guard!

STARFAK is new! It is the latest development in efficient lubrication for high-speed, light-service ball and roller bearings operating over a wide range of temperatures. It solves a difficult problem in lubricating this type of bearing on modern textile machinery.

Proved in Service

TEXACO STARFAK is the result of many years intensive research. It has been tested in the Texaco laboratories with new experimental equipment especially designed to reproduce a wide range of operating conditions. It has been proved in service by many well-known mills. It is approved by bearing manufacturers and machinery builders. It is being used today by large and small operators in every branch of the textile industry.

Do not over-fill bearings with TEXACO STARFAK. A small quantity will lubricate efficiently and economically under the most severe conditions. STARFAK will not separate. It stubbornly resists oxidation and gum formation and will not "throw off." Also, *starting and running torque are remarkably low, resulting in reduced power consumption.*

Longer Life, Lower Costs

TEXACO STARFAK on your machinery will mean longer bearing life, savings in power, less maintenance and repair expense. STARFAK will step up the performance of your high-speed units, bring new economies and insure better, smoother operation.

It won't cost you anything to find out all about TEXACO STARFAK. Just write and ask for a Texaco representative to call and give you the facts about this sensational new lubricant and its application in your mill. No obligation.

THE TEXAS COMPANY
135 East 42nd Street • New York City

Nation-wide distribution facilities assure prompt delivery

TEXACO *tested* LUBRICANTS

REFINERY TESTED FOR UNIFORMITY • • • SERVICE TESTED FOR ECONOMY

Self-sealed and Self-lubricated. Sample Free.

Ball bearings outlast plain bearings because they reduce wear considerably. Friction is eliminated almost entirely. And lint, the worst enemy of any bearing, may be barred more effectively.

Until New Departure engineers introduced the revolutionary idea of seals integral with the bearing, each machine builder was compelled to make and install a multiplicity of small parts — a slow and expensive procedure.

No wonder the N-D-Seal gained instant popularity! The cutaway view tells you the story. Only the finest woven felt is used for seal material. Tearing is prevented by glass-smooth metal surfaces. The overhung shield makes a most effective protection against injury to bearing from foreign matter.

Each bearing is filled at the factory with sufficient and proper lubricant for several seasons of service.

Scores of instances can be cited in which N-D-Seals are performing with great success at speeds of 10,000 to 30,000 r. p. m.

Send for sample N-D-Seal and a booklet describing this and other self-lubricated bearings. Offer is limited to engineers and executives who write on their company letterhead. The New Departure Mfg. Company, Bristol, Connecticut; 913 First National Bank Building, Charlotte, North Carolina.

NEW DEPARTURE BALL BEARINGS

2273

Let us solve YOUR *problems for you!*

COMPANY MEMORANDUM

To: Textile Research Department

From: Mill Starch Division

Following is inquiry we received:

Our plant is printing some Rapidogen colors. We find that the paste "thins down" after standing in the tub. We would appreciate your advising if you can supply a Rapidogen Printing Gum which will hold its body and can be printed after standing.

COMPANY MEMORANDUM

To: Mill Starch Division

From: Textile Research Department

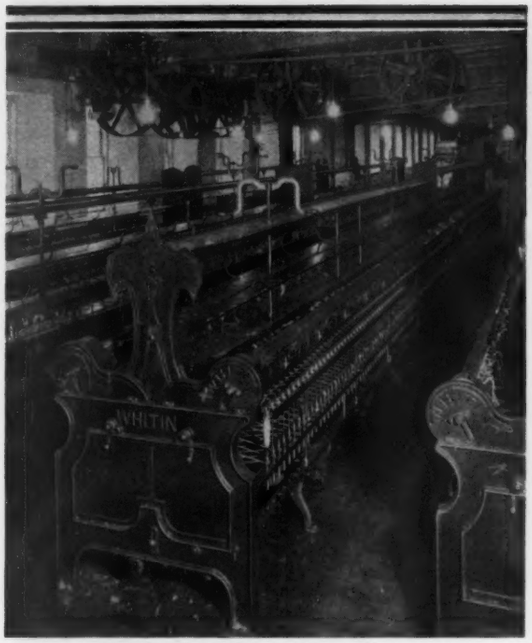
Answering your recent memo in reference to inquiry, our laboratories report as follows:-

We have conducted considerable research in an effort to develop a printing thickener that will "stand up" under the chemicals used in printing Rapidogens. The product we are now offering will resist the action of these chemicals to a remarkable degree, this having been confirmed by both laboratory and plant tests. We will be glad to supply a sufficient quantity for a practical trial.

THE facilities of our Research Department are at your disposal. We hope you will feel free to take advantage of this service.

CORN PRODUCTS SALES COMPANY • 17 BATTERY PLACE, NEW YORK CITY

BRANCH OFFICES: GREENVILLE, S. C. • SPARTANBURG, S. C. • BOSTON, MASS.



22-FRAME INSTALLATION RECENTLY REPLACED BUILT 1879, ACTIVE 55 YEARS.

of Textile Machinery, Too, Are Gone Forever!

• Sixteen million spindles now active in cotton mills are at least twenty-five years old. Many of them have seen forty years of actual service.

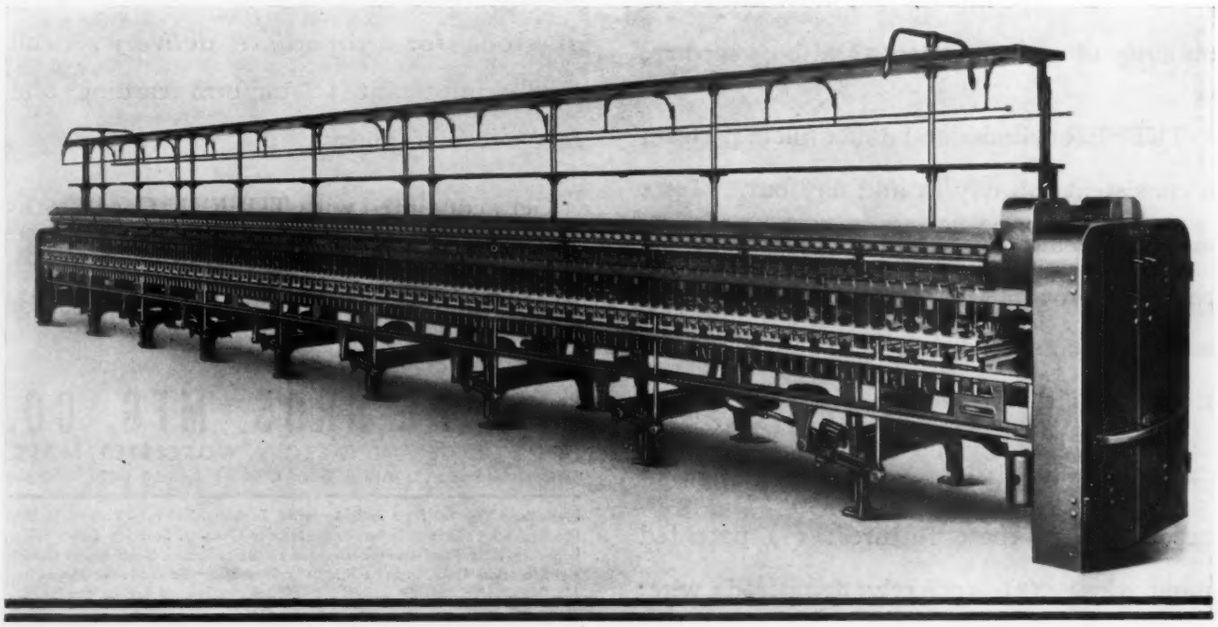
• Today, no high court decision can set aside the overwhelming advantages derived from an installation of WHITIN High Speed Spinning.

• It is the surest investment a mill can make to meet the demand for highest quality yarns at lowest costs.

• If your spinning frames are twenty years old, they should be retired, with old dobbin and the family carryall.

As far back as your dad can remember, Whitin set the standards in Spinning Frame performance. They still do.

THE WHITIN 1935 "MODEL F2" LARGE PACKAGE SPINNING FRAME.



7 OUT OF 10 COTTON MILLS USE

TRADE MARK
TUFFER
REG. U.S. PAT. OFF.
CARD CLOTHING

because it gives better and longer service

IT is very easy to choose the right card clothing if you follow the judgment of the majority of superintendents and boss carders.

TUFFER cylinder and doffer fillets perform a consistent job day in and day out. Tests and performance records prove that TUFFER top flats provide the exact precision to stay set as close as needed to maintain clearance through all the variations of revolving flats.

TUFFER Card Clothing owes its unusual acceptance to these features: (1) patented foundation; (2) correctly tempered wire; (3) holds its edge longer; (4) strips easier; (5) sets closer; (6) *all widths and lengths in stock for immediate delivery* .... all vitally important to uniform carding and card room economy.

Get acquainted with TUFFER Card Clothing service and quality .. at no price premium. Write the nearest Howard Bros. office for quick, dependable service.

HOWARD BROS. MFG. CO.
HOME OFFICE AND FACTORY: WORCESTER, MASS.
So. Plant: 244 Forsythe St., Atlanta, **Branch Offices:** Philadelphia, Dallas, Washington

Products: Fillets for Feed Rolls, Lickerins, Tumblers, Strippers, Workers, Doffers Fancies, and Cylinders, Doffer Rings, Napper Clothing, Strickles, Emery Fillets, Burnisher Fillets, Top Flats Recovered and extra sets loaned, Lickerins and Garnett Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant. Midgley Patented Hand Stripping Cards and Inserted Eye and Regular Wire Heddles

ON THIS SUBJECT OF **LOOM SUPPLY PARTS**

With these we do over 80% of our supply business. The other 20% is done on some 450,000 non-stock items.

How do we determine what is to be carried in warehouse? We have a definite rule that when any item is ordered by three different customers within the period of one year it is a candidate for stock.

At Worcester there is a six-story, fireproof concrete building housing the patterns for over 400,000 parts—permitting us, fortunately or unfortunately, to make parts for looms which may be as much as 40 years old.

We want to receive all the spare parts business on C & K looms and we want it on the basis of merit—not sentiment. Because we have the original drawings, the original patterns and jigs, because we are loom builders we **must** know more about the dimensions and design of parts than anyone else.

Our Laboratory, our Engineering Department, our Staff of Inventors and our Experimental Rooms are yours also—absolutely at your disposal.

Give us your ideas, your criticisms, and your business; by so doing you help yourself. You are the one that benefits in the end from our machinery refinements and improvements. By increasing our volume of business on supply items you reduce our overhead and thus permit us to bring about cost savings that are returned to you.

Look upon us as your Associate in the Textile Industry

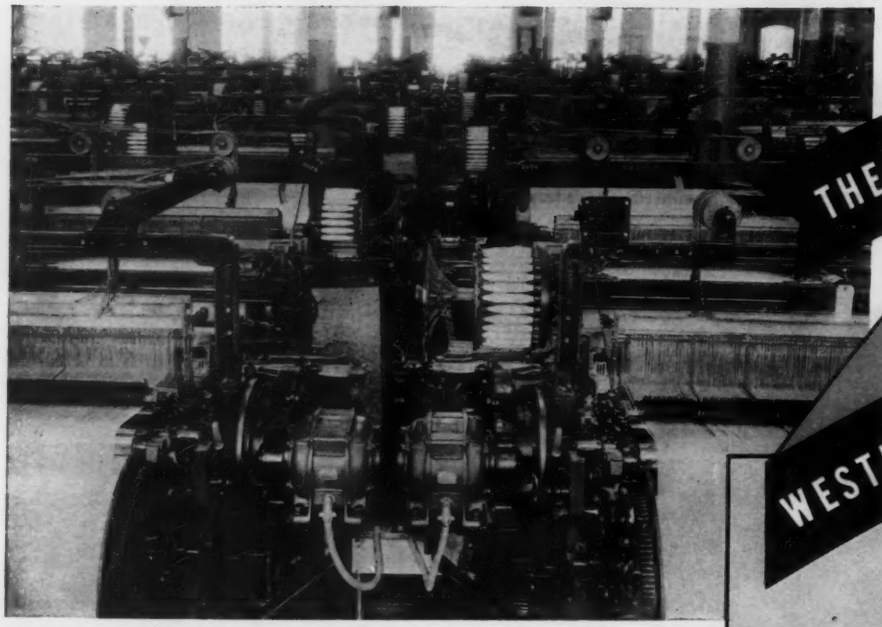
CROMPTON & KNOWLES LOOM WORKS

WORCESTER, MASS.

ALLENTOWN, PENNSYLVANIA • PHILADELPHIA, PENNSYLVANIA • CHARLOTTE, NORTH CAROLINA

CROMPTON & KNOWLES JACQUARD & SUPPLY CO., PAWTUCKET, RHODE ISLAND

Cut Weaving Costs
WITH THIS WINNING PAIR



THE X MODEL LOOM

WESTINGHOUSE DRIVE

Weave Room in a large Columbus, Georgia, mill using Draper X model looms equipped with Westinghouse Motor Drive.

●Many mills have tried to speed up old looms—to their sorrow. It can be done, but there's a heavy penalty in increased supply bills.

You can cut weaving costs and supply bills the right way when you replace old looms with modern high-speed machines, like the Draper X model equipped with Westinghouse drive.

The high-capacity Westinghouse motor has ample power to take care of all load conditions, and to assure smooth operation during the breaking-in period.

Furthermore, the high efficiency of this motor makes it so thrifty in its power consumption that considerable savings are made in the power bills.

Westinghouse Loom Drives are particularly adapted to the new high-speed looms, such as Draper models C, X, XK, XL and Crompton & Knowles models C3, C4, S3, S4, W2 and W3. Write for information.

R 61007

The Westinghouse high-efficiency Loom Motor is built extra-strong to withstand high speed loom service. High humidity will not damage the windings—they are triple-impregnated.

★

The pedestal-mounted WK-18 starter. It guards the motor against damage from overloads. Safely and quickly reset, when it trips, by any operative.

WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY
East Springfield Works Springfield, Massachusetts

Westinghouse LOOM DRIVE

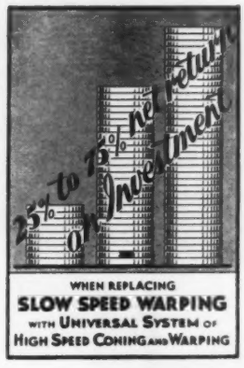
WHEN THE *lowest* PRICE IS THE *richest* INVESTMENT

Several choices were open to a mill replacing its obsolete slow speed warping equipment. One of them was to install the Universal System of High Speed Coning and Warping at the lowest investment cost of any high speed system.

Twice the net return. When the savings were compared, the Universal System showed a net return on investment 100% higher. On this basis, the Universal System would require the least amount of money—and for the shortest time.

Half the depreciation. The lower depreciation cost ***throughout the life of Universal machines,*** together with the lower maintenance cost, offsets other savings possible with machines of higher investment cost.

And weave room savings. Also considered were savings in the weave room. Uniform winding speed permits minimum tension, and the elasticity of the yarn is retained. Dead yarn is eliminated by the magazine creeling system which takes every last inch of yarn from the cone. And the electrically-controlled stop motion of the warper prevents lost and crossed ends in the loom beam. These improvements result in substantial economies in the weave room.


25% to 75% net return on Investment
WHEN REPLACING
SLOW SPEED WARPING
WITH UNIVERSAL SYSTEM OF
HIGH SPEED CONING AND WARPING

In 3 out of 4, more return. This was an average-sized mill—the case, an average case taken from our files. The results, we are sure, would be relatively the same for almost any other mill. In fact, in 3 out of 4 mills now doing slow speed warping, the Universal System will bring a greater net return than ***any*** other system—and, in ***every*** case, will return 25 to 75% a year.

Where does your mill stand—is it one of the "3 out of 4"? It will entail no obligation to find out. If you have not had an estimate of savings and investment submitted by our firm within the past year, it will pay you to get in touch with us now. Address Dept. A, Boston, or the branch office nearest you.

IN 3 OUT OF 4 MILLS MORE NET RETURN

Universal System of High Speed Coning and Warping

UNIVERSAL WINDING COMPANY

BOSTON

NEW YORK · PHILADELPHIA · PROVIDENCE · SPRINGFIELD · UTICA · CHARLOTTE · ATLANTA

1739

SOME OF THESE SHOULD ALWAYS BE ON HAND IN EVERY COTTON MILL SUPPLY ROOM

Clean! Quiet! Cool!

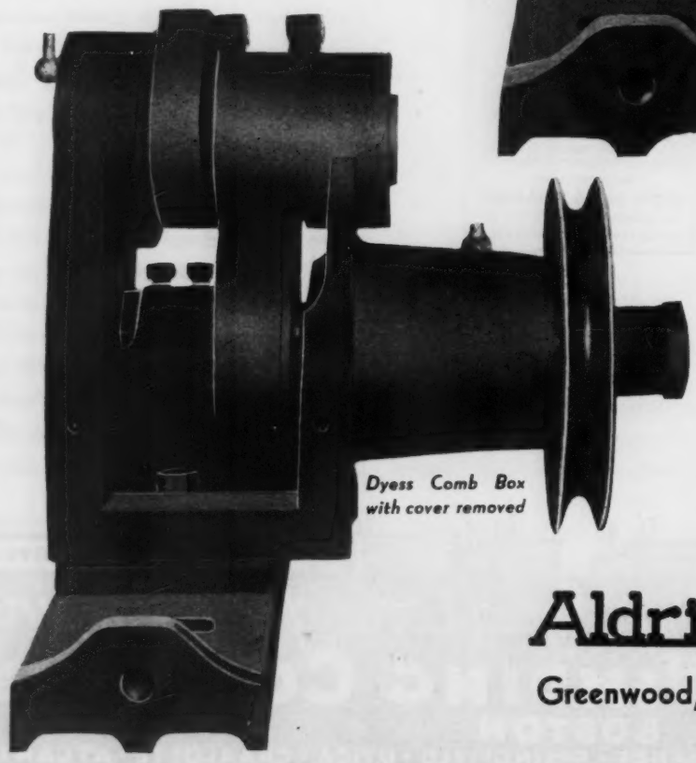
No Drip - No Spatter - No Rattle

▼

Old, worn-out comb boxes waste oil and are a constant expense.

Their perpetual dripping of oil on the floor is a menace to safety.

Their spattering injures the card clothing, and stains the work.



Dyess Comb Box with cover removed

Replace them with new ball bearing comb boxes kept on hand always in the supply room.

Made by

ALDRICH MACHINE WORKS

Greenwood, South Carolina

"H-W"

(Trade Mark Registered)

Now offers—

A FULL RANGE OF POSITIVE YARN CONDITIONING EQUIPMENT FOR THE TEXTILE INDUSTRIES

1. "H-W" SILK CONDITIONER.
2. "H-W" COTTON CONDITIONER.
3. "H-W" RAYON CONDITIONER.
4. "H-W" CONDITIONER FOR TWIST-SETTING.
5. "H-W" HUMIDIFIER.
6. "H-W" STEAMING TRUCK FOR RAYON QUILLS.
7. "H-W" CONDITIONING TRUCK.

The conditioning principle behind the H-W Conditioner rests on the scientific fact that moisture must be very finely divided in air in order to be restored to any material. The humid air must be kept in motion and have a suitable consistency and temperature to insure uniformity and quick penetration. This principle has been worked out in all H-W Conditioners, now successfully used by many important textile manufacturers. The patented construction of H-W Conditioners eliminates any possibility of free moisture or drip.

Positive and uniform yarn conditioning in this manner has been a boon to Knitters, Throwsters and Weavers. Knitters report elimination of sleazy knitting and reduction in seconds. Throwsters get less breaks, better winding and redrawing production. Weavers report less loom stoppage and seconds due to kinky or slubby filling, "shiners" or tight picks, sloughing-off in the shuttle, etc. Write us for complete information.

Sales Representatives

Southern States
W. A. Kennedy Co.
Charlotte, N. C.

Pennsylvania
Merkel Bobbin Co.
Allentown, Pa.

Midwest
Albert R. Breen
2650 Coyne St.
Chicago, Ill.

The "H-W" Conditioner is fully covered by patents.

"H-W" CONDITIONER for POSITIVE Yarn Conditioning

THE INDUSTRIAL DRYER CORPORATION

Stamford ··· Conn.

1859—76 YEARS OF SEWING PROGRESS—1935

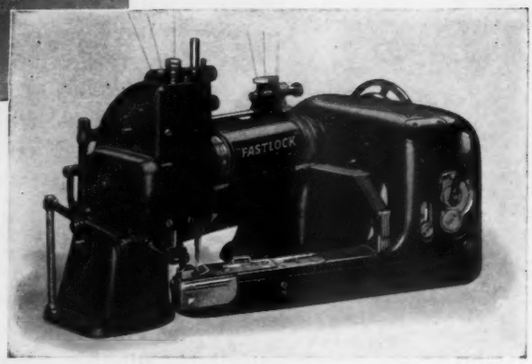
The new popular elastic-top knee-high stocking made on the Fastlock.

SEW THE ELASTIC TOP ON WITH THE FASTLOCK

Many more dozens per hour. Lower production costs. A neater, finished stocking. Elastic securely attached. No welt required. A longer lasting stocking.

THE MARKET FOR KNEE-HIGH HOSIERY IS UNLIMITED

With an unlimited market ahead and the production problem of attaching the elastic, made a thing of the past by the introduction of the Willcox & Gibbs new Fastlock Machine, manufacturers are now in a position to take full advantage of the possibilities offered by the popular elastic-top knee-high stocking. The Fastlock has been proven in actual everyday production schedules. The experimenting has all been done. The Fastlock is ready now for hard, regular, steady work.



THE FASTLOCK

Fast, accurate, positive and easy to operate, it has a remarkably high production capacity.

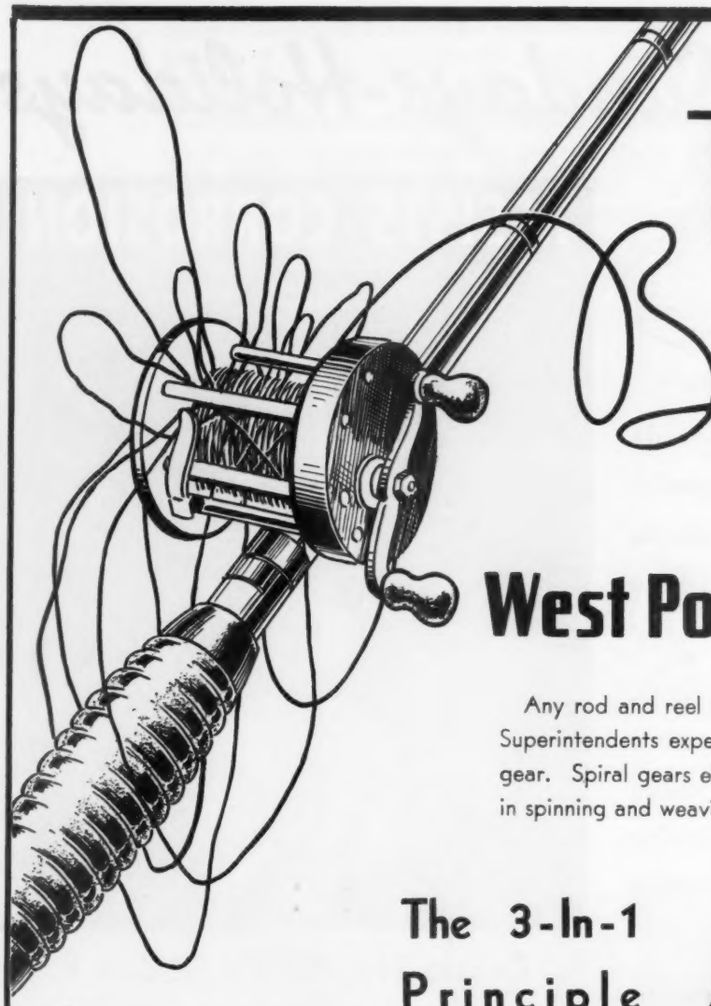
Let us demonstrate the Fastlock on your stockings, without obligation to you. Our demonstration will give you definite, positive proof of the real worth of the Fastlock.

WILLCOX & GIBBS
SEWING MACHINE COMPANY

HOME OFFICES

656-658 BROADWAY, NEW YORK, N. Y.

New Willcox & Gibbs Machines and genuine Parts may be purchased only from company's offices.



THERE'S NO Backlash WITH West Point Spiral Gears

Any rod and reel fisherman knows the woes of backlashing. Mill Superintendents experience the same trouble in worn straight tooth gear. Spiral gears eliminate backlash and consequent imperfections in spinning and weaving.

The 3-In-1 Principle

WEST POINT SPIRAL GEARS with three-tooth contact at all times, smooth operation and less shock to machinery are definite cost reducers.

We make these gears for any purpose, of any size, for any textile machine.

WEST POINT SPIRAL GEARS are only one of our many specialties. We are manufacturers of repair parts, Loom Beams, Beam Heads, Beam Barrels, Sizing Vats and textile and other special machinery for any purpose.

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA

Nights-Sundays-Holidays
Crane Co mfrs valves fittings plmbrs supls
294 Delaware av...CL evind-1414
Nights Sundays & Holidays...RI vrside-2744
H Tnwnds Div 555 Main N Ton..RI vrside-2341
Warehouse 201 Church.....WA shgtn-7580
Crane Beverly B 466 Dundee rd..LI ncoln-2630

■ The Crane Co. listing in hundreds of telephone directories includes a special phone number labeled "Nights, Sundays, Holidays." It symbolizes Crane's readiness to serve in emergencies.

Comprehensive stocks of Crane valves, fittings, piping and efficient fabrication services, available in leading cities, make possible not only this emergency service but prompt action for those maintenance needs which forestall emergencies.

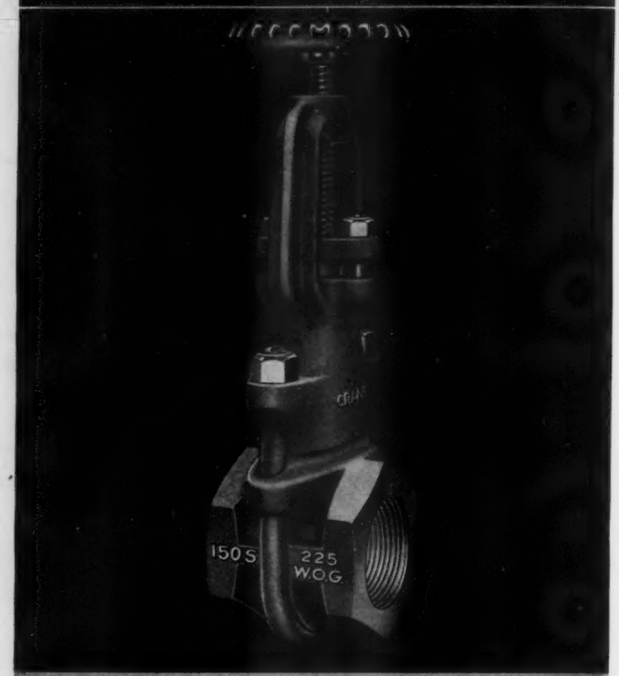
Strains, excessive vibrations, corrosion or dirt in the line mean that an emergency lies not far away—mean waste, loss, inefficiency. Crane Shop Fabrication Service can correct the condition quickly—permanently. Call the nearest Crane branch for immediate assistance in your piping problem.

CRANE SHOP FABRICATION SERVICE

Design — Flanging
Casting — Cutting
Bending — Threading
Welding — Assembling

There is a Crane Valve or fitting for every piping requirement

RESISTS CORROSION



Crane No. 484½ O. S. & Y. Clamp Gate Valve

1. All-iron construction to resist corrosive action of many chemicals.
2. Remove two nuts and all working parts may be lifted from valve body for quick cleaning.
3. Operating stem threads outside of valve away from fluid in line.
4. Economical in original cost and compact in design.
5. Also available with flanged ends and with brass trimmings.

CRANE VALVES, FITTINGS and PIPE FABRICATION

CRANE CO., GENERAL OFFICES: 836 SO. MICHIGAN AVE., CHICAGO, ILL. • NEW YORK 23 W. 44TH STREET

Branches and Sales Offices in One Hundred and Sixty Cities

RELIANCE MOTOR-DRIVES FOR ROPE SOAPERS IN RANGE

Straight-run Layouts keep cloth on the move

HERE'S another way that finishing plants are using straight-run layouts to save space and keep cloth moving faster with less in-between handling.

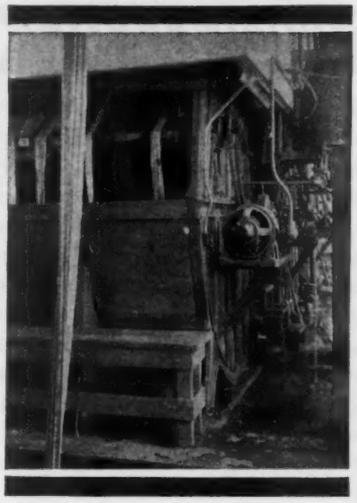
Simplified transmission parts improve overhead conditions and help to lessen upkeep.

Power is used more efficiently and controlled with ease and safety.

Motors are kept in step and slack in the material taken up automatically by the use of compensating gates with motor field rheostats between sections.

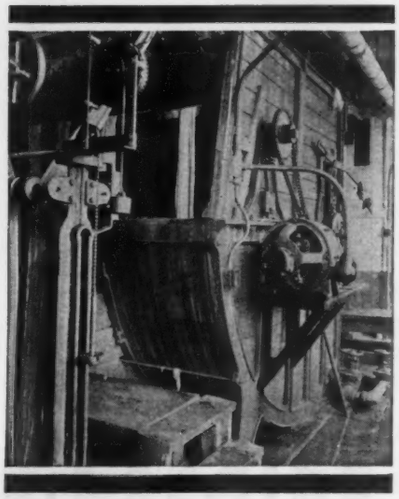
● ● ●

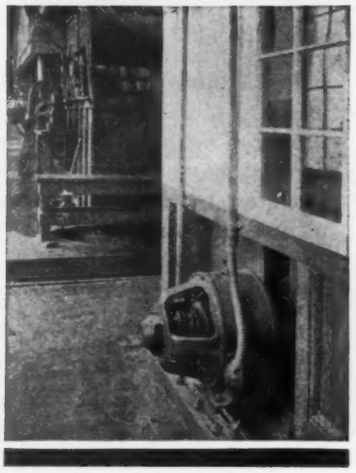
You are invited to make use of the experience gained by Reliance men in aiding other finishing plants to develop motor-drives for straight-run layouts. No obligation is incurred.



Three Rodney-Hunt Rope Soapers operating in range. A 5 hp. 850/1275 r. p. m. Type T Reliance Motor is used for one soaper from which a squeezer is also driven. 3 hp. 850/1275 r.p.m. motors are used on the others.

Third soaper in the range. At the left is the compensating gate with motor field rheostat which is operated automatically as the slack on the rope varies. This keeps the adjoining soaper in step with this one.





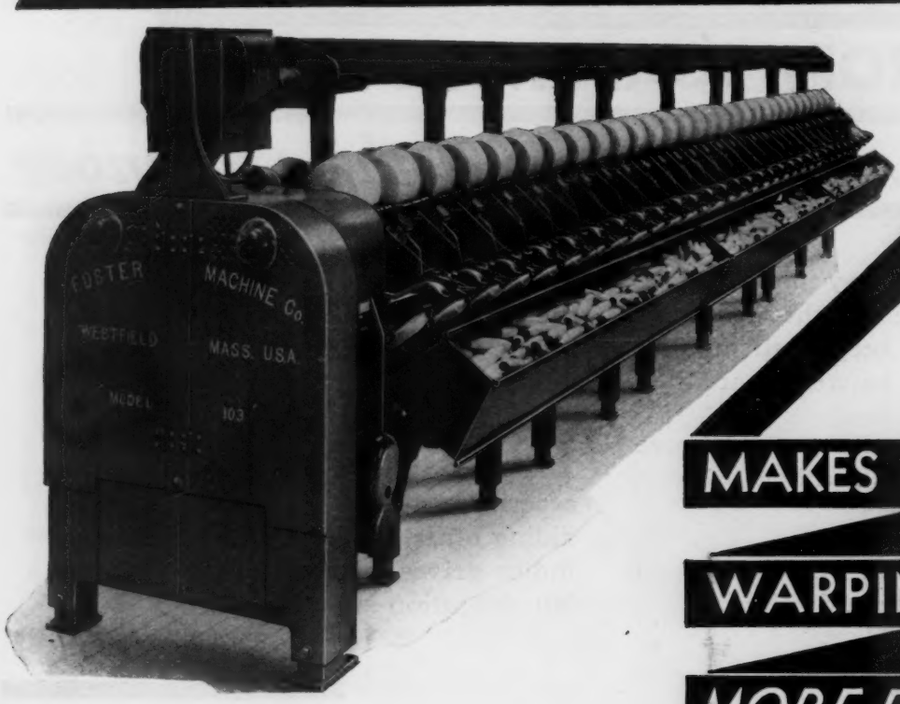
The motor in the foreground (7½ hp. 400-1600 r.p.m.) drives 31 drying cylinders and scutcher. The cylinders are operated in range with the three rope soapers in the background but speeds are controlled by hand to suit conditions

RELIANCE A·C D·C MOTORS

RELIANCE ELECTRIC AND ENGINEERING COMPANY
Ivanhoe Road, Cleveland, Ohio

Branches: Birmingham : Boston : Buffalo
Chicago : Cincinnati : Detroit : New York
Philadelphia : Pittsburgh : Washington
Representatives in other principal cities

FOSTER MODEL 103 ROTARY GUIDE WINDER



MAKES HIGH SPEED WARPING *STILL* *MORE PROFITABLE*

The advantages of Foster High Speed Coning and Warping, as compared with slow speed spool warping, have already been demonstrated by numerous successful installations in the past. The advantages are as follows:

1. Elimination of warping stops for doffing, due to magazine creel.

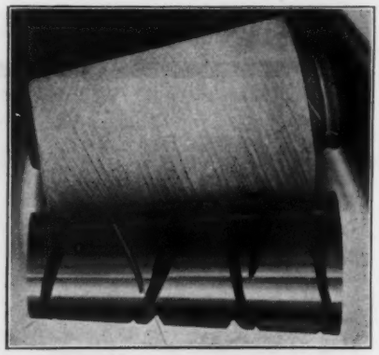
2. Larger creel packages (4 lbs. each if desired), which reduce doffing and trucking at the winder and cost of recreeling.

3. Much higher warping speeds (up to 800 yards per minute).

4. Uniform tension at the creel, due to overend delivery from cones, through special tension device. This results in improved texture, feel and general appearance of fabrics.

5. Savings in labor, power and floor space due to above features.

In the past the larger part of the savings have been effected at the creel, although the cone winding has been indispensable to the successful operation of the creel. Now, however, the new Foster Model 103 Rotary Guide Winder makes Foster High Speed Warping still more profitable, partly because it permits higher winding speeds. The top speed is limited only by the "give off" of the yarn from the supply package. Aside from this limitation the finest warp yarn may be wound at the same speed as coarse numbers. Further economies are due to the fact that the machine, having no reciprocating yarn traverse parts, has a lower maintenance cost.



● *Model 103 Conical Driving Roll and Yarn Guide. The taper eliminates yarn Chafing.*

FOSTER

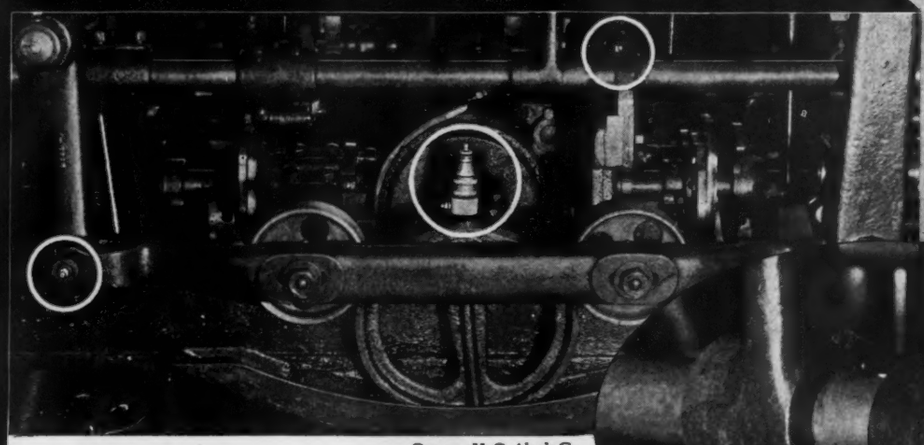
HIGH SPEED CONING AND WARPING

Consider the modernization of your warping department. It involves a smaller investment than does the complete modernization of any other major manufacturing department in your mill. It also offers a bigger proportionate return in most cases.

May we estimate on your requirements?

FOSTER MACHINE CO.
WESTFIELD, MASS.
Southern Agent — Fred P. Brooks,
Box 941, Atlanta, Ga.

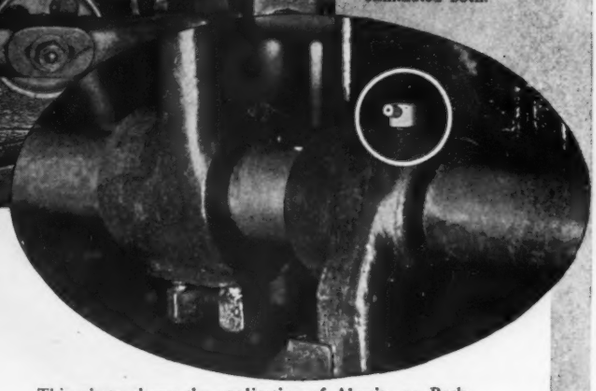
Alemite
makes amazing savings
IN FULL-FASHIONED HOSIERY MILLS



Courtesy H. C. Aberle Co.

★

A view of the Coulier mechanism of one of the many Alemite equipped full-fashioned hosiery machines in the Aberle mill. Before installing Alemite, Aberle often experienced seizure and breakage in these important oscillating bearings due to moisture that brought about a rust condition—Alemite eliminated both.



This photo shows the application of Alemite on Back Catch-bar Bearing of full-fashioned hosiery machine. Before installing Alemite this bearing required "oil can" lubrication every day. Now, lubricated with Alemite solidified oil (TEMPRITE No. 33), it requires servicing *once* every *100 hours*.

This Modern, Clean, Positive Lubrication System Eliminates Expensive Bearing Replacements, Cuts Labor and Lubricant Costs, Prevents Oil Contamination

● On hundreds of full-fashioned hosiery machines in the largest and finest mills Alemite has proved its effectiveness and efficiency in reducing lubrication costs, eliminating expensive bearing failures and preventing oil contamination of the finished product. By assuring clean, positive, adequate lubrication to vital bearing surfaces—sealing them against the entrance of dirt and moisture—this modern, high-pressure lubricating system is repaying its small cost over and over again.

Time savings as high as 80%, lubricant savings as high as 50%, *are the rule* rather than the exception where mill operators replace dripping, grimy oil holes with Alemite Fittings and use Alemite solidified oil! And the change-over can be made simply and easily without loss of production time. Another example of savings offered by Alemite to the textile industry.

Right now and without a cent of cost or obligation you can have an Alemite Lubrication Engineer make a complete survey of the lubrication requirements of your plant and equipment. Hundreds of operators have already taken advantage of this free offer to their profit—made amazing savings. Fill in the attached coupon now and mail it at once. Remember, there's no obligation.

ALEMITE CORPORATION
(Division of Stewart-Warner Corporation)
1884 Diversey Parkway Chicago, Illinois
Stewart-Warner-Alemite Corp'n. of Canada, Ltd., Belleville, Ont.

★ **ALEMITE** ★
Reg. U.S. Pat. Off.
Controlled Application of the Correct Lubricant

★ ★ ★
This man is cutting costs in hundreds of mills and can do it for you.

ALEMITE CORPORATION, Dept. G
(Division of Stewart-Warner Corporation)
1884 Diversey Parkway, Chicago, Illinois

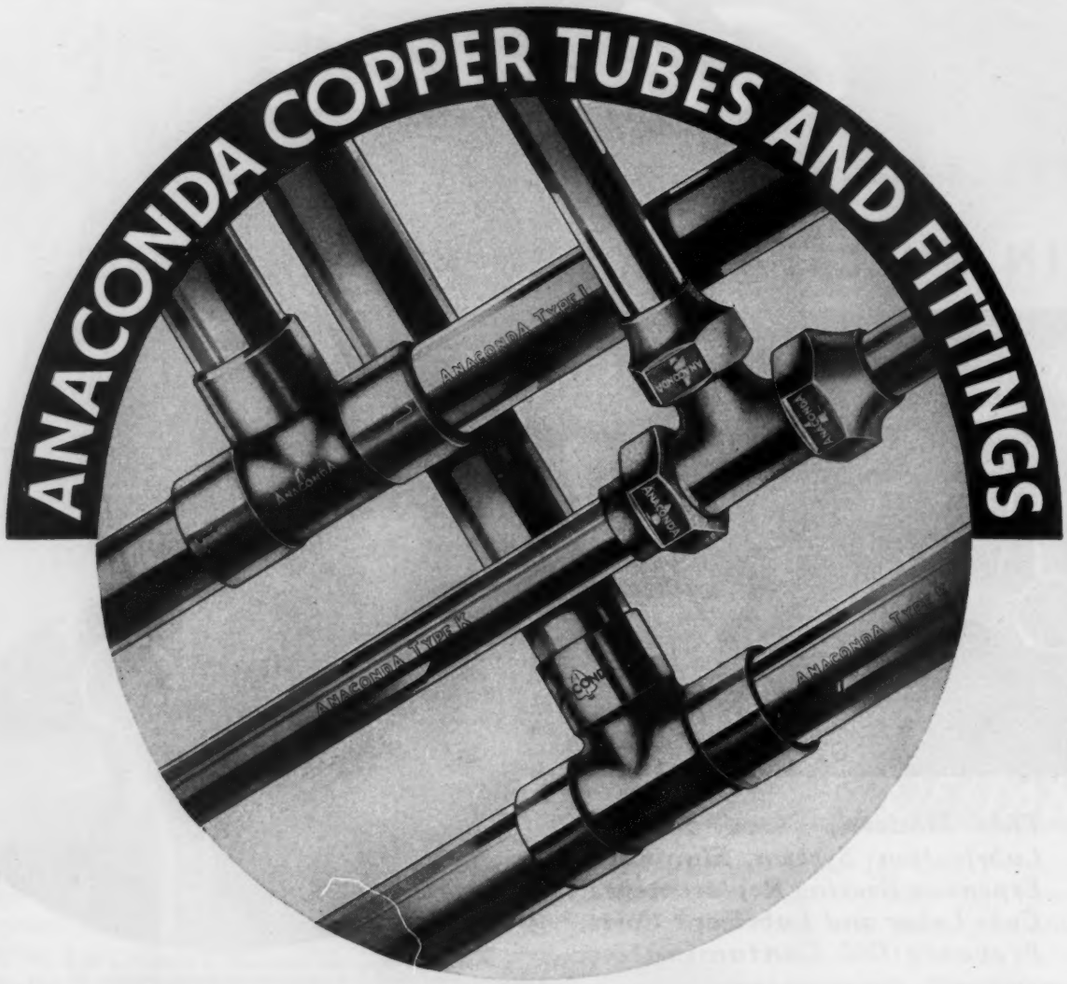
I accept your free lubrication analysis offer. Please see that I get complete information.

*Name*_____

*Address*_____

*Mill Name*_____

*City*_____ *State*_____



For Low cost, Rust-proof Lines

ANACONDA

EVERYONE knows that rust-proof piping costs less to maintain. And, today . . . with the development of threadless fittings for assembling copper tubes . . . the first cost of *rust-proof* piping has been reduced to a level comparable with that of rustable material. The American Brass Company offers Anaconda Deoxidized Copper Tubes and a complete line of Anaconda "Solder" and "Flared Tube" fittings for conveying water, oil, gas and steam where conditions of pressure and temperature are normal.

Anaconda Copper Tubes—Anaconda Copper Tubes are furnished in two wall thicknesses—Types "K" and "L", which respectively conform to U. S. Government Spec. No. WW-T-799 and A.S.T.M. Spec. No. B-88-33.

Anaconda Copper Tube Fittings—Solder fittings may be had in either wrought copper or cast bronze; flared tube fittings are cast bronze. All three types are furnished in elbows, tees, couplings and unions, including a complete range of reduction and adapter combinations. Solder fittings are checked with maximum and minimum gauges to insure accuracy and the close tolerance required for dependable solder connections.

Deoxidized Copper Tubes
Types "K" *and* "L"—⅛" to 8" *incl.*

Wrought Copper Solder Fittings
⅛" to 2" *incl.*

Cast Bronze Solder Fittings
⅛" to 6" *incl.*

Cast Bronze Solder Valves
Gate Valves
⅜" to 2" *incl.*

Globe and Stop & Drain Valves
⅜" to 1" *incl.*

Cast Bronze Flared Tube Fittings
⅛" to 2" *incl.*

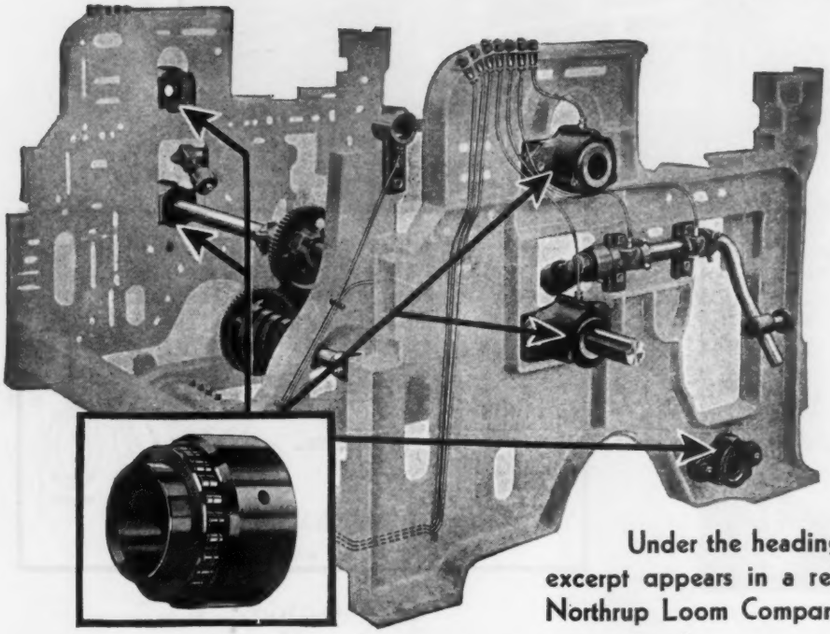
THE AMERICAN BRASS COMPANY
General Offices: Waterbury, Connecticut
Offices and Agencies in Principal Cities

ANACONDA COPPER & BRASS

BRITISH BUY BETTER BEARINGS

(Which Means HYATT Bearings)

for THEIR LOOMS



In this stripped chassis of a British Northrup Loom the arrows indicate the locations of Hyatt Roller Bearings.

"Increase the loom efficiency. Reduce the power required to drive the loom. Decrease wear and tear in the loom parts.

Fit roller bearings for crankshafts, tappetshafts and swing rails.

Heavy, and wide, looms more easily operated.

Light looms capable of producing still better qualities of cloth.

Insist on roller bearings."

Under the heading "Roller Bearings" the above excerpt appears in a recent catalog of the British Northrup Loom Company, Ltd., Blackburn, England.

OUR British cousins have the name of being conservative, and they are conservative. At the same time, however, they are progressive, and when they see a real improvement, like Hyatt Roller Bearings for cotton looms (or any other type loom, for that matter), they adopt it and urge the mills to buy it.

***The British are awake to world competition* and know that they can gain world trade and control their markets only by taking advantage of every new sound development.**

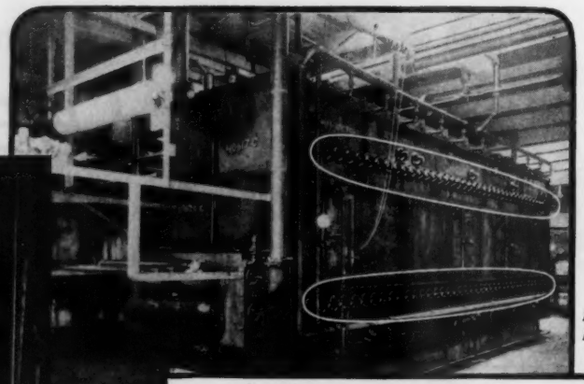
American mills will do well to follow their enlightened example. Let us show you how. Hyatt Roller Bearing Company, P. O. Box 476, Newark, New Jersey.

HYATT

ROLLER BEARINGS

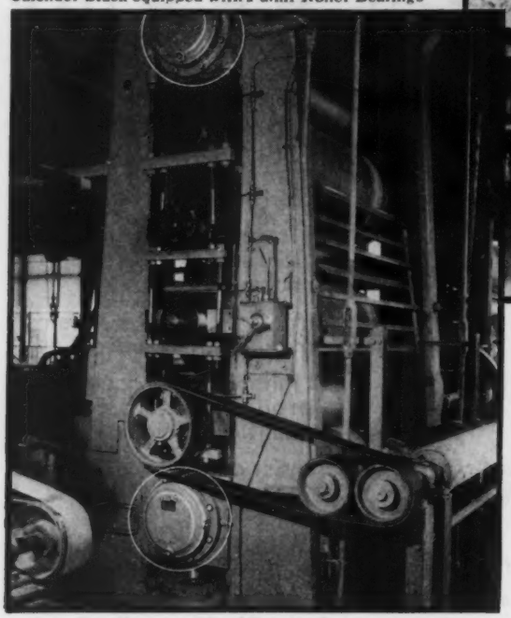
PRODUCT OF GENERAL MOTORS

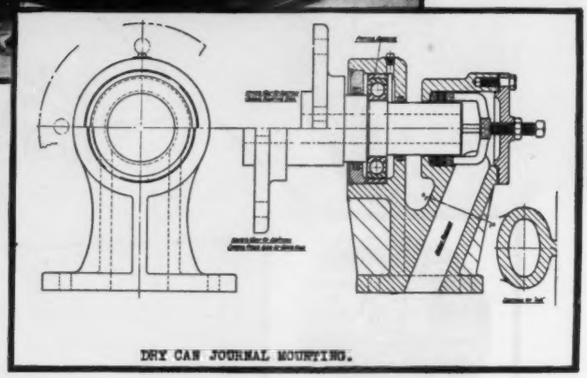
For Textile Finishing Machinery . . .



176 Fafnir Ball Bearings on Ager

Calender Stack equipped with Fafnir Roller Bearings





DRY CAN JOURNAL MOUNTING.

on DRY CANS, for instance, Stuffing Boxes are Leakproof...*with* FAFNIRS

When Fafnir Ball Bearings are used on dry can journal mountings, leaky stuffing boxes do not occur. By practically eliminating friction, these ball bearings reduce wear so much that the unit will run indefinitely without attention.

The special construction provides a means for dissipating the heat generated by the steam . . . a decided improvement over plain bearing construction, where the heat has always made lubrication difficult.

The dry can journal mounting is only one of several applications of Fafnir Ball Bearings for textile finishing machinery. Special Fafnir Pillow Blocks, on the Ager shown above, although exposed to live steam and acetic acid, operate without attention or maintenance. The lubricant is retained within the bearing housing and acid fumes are excluded.

And on the Calender Stack illustrated, specially designed Fafnir Roller Bearing Boxes increased speed 40% and roll life 300%.

For any one of the 63 machines through which the cotton fiber may pass in its processing, there is a Fafnir Bearing that can save maximum power costs. "The most complete line of ball bearings in America" assures the most efficient ball bearing for each application. THE FAFNIR BEARING COMPANY, *New Britain, Connecticut.* Representatives also at: Atlanta, Georgia . . . Houston, Texas . . . Charlotte, North Carolina . . . Boston, Massachusetts . . . Dallas, Texas . . . Birmingham, Alabama.

Safeguarding Quality

FAFNIR BALL BEARINGS

"The Tops"

FOR WATER REPELLENCY

- *Showerproofing*
- *Spotproofing*
- *Splashproofing*
- *Rainproofing*

ACETATE OF ALUMINA W-560 S

OUR Acetate of Alumina W-560 S now has a higher aluminum content—7% Al_2O_3—brought about by our new exclusive process of manufacture. It is low in free acid content and will not decompose at the boiling point.

Greater stability is obtained because this new improved product is free from sulphates. It is clear and free from sediment and is more miscible with soluble waxes.

All fabrics, cotton, wool, rayon or silk can be made water-shedding or water-repellent with Acetate of Alumina W-560 S and Waterproofing Wax S-441 A.

The waterproofing qualities of Waterproof W-559 have been materially improved because Acetate of Alumina W-560 S is now a component part of our especially prepared waterproofing compound.

FREE: Write today for samples and specific directions.

JACQUES WOLF & CO.

MANUFACTURING CHEMISTS AND IMPORTERS . . . PASSAIC, NEW JERSEY

Warehouses: Providence, R. I., Philadelphia, Pa., Utica, N.Y., Chicago, Ill., Greenville, S. C., Chattanooga, Tenn.

OVERHEAD Cut Down... WORKMANSHIP Stepped Up!

Above—Nickel mixing-pot used for more than 24 years in laboratory of S & H Dyeing Co., West New York, N. J. After this long service, the Nickel pot is as serviceable as when installed.

Left—Monel Metal pails and beakers in daily use from 6 to 8 years at the plant of the S & H Dyeing Co., West New York, N. J. These utensils are used for handling acids, alkalies and dyestuffs.

Right—Monel Metal lined wood dye tank at the plant of S & H Dyeing Co., West New York, N. J. Used for dyeing rayon in direct and basic colors. Joints lock-seamed and silver soldered.

ORGAN FINISH

S. & H. DYEING CO., INC.

RAYON SKEIN DYERS

MERCERIZED YARNS AND FAST COLORS A SPECIALTY

685-695 FILLMORE PLACE

WEST NEW YORK, N. J.

ESTABLISHED 19

March 15, 1935

International Nickel Co.,
67 Wall St.,
New York City

Gentlemen:

We have been using your monel metal and nickel in our plant equipment for the last ten years and have had very gratifying results. Not only has our overhead been cut down considerably, but more uniform workmanship has been obtained due to the fact that monel metal did not affect the shades during the dyeing process.

We have had pails in the dye house for the last eight years and have the first time had to replace some of these with new equipment. Due to the fact that these pails are in daily use with Caustic Soda, Sulphuric and Acetic Acids we believe that they have held up remarkably well.

In the laboratory the writer has used a nickel pot since 1911 and is still in use, without any perceptible notice of wear.

We intend replacing all our dye boxes in the near future with monel lined materials.

Very truly yours,

S & H DYEING CO. INC.

Herbert Freund,
Secret

READ the letter at the top of this page from the S & H Dyeing Co. It tells how they lower overhead and get more uniform workmanship . . . by using Monel Metal.

This dyehouse never has to consider damage due to splinters, nor the waste of time boiling out between changes of color. The dense, smooth surface of Monel Metal absorbs absolutely no color. And there are no rust-spots . . . ever.

Monel Metal in all usual forms is available from warehouses in 23 principal cities.

Textile men need our literature, and the revised "Buyer's Guide of Monel Metal Textile Plant Equipment". Free for the asking.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 WALL STREET, NEW YORK, N. Y.

Monel Metal is a registered trade-mark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

NRA CODE

MONEL METAL

BEAUTY ADVANCES
with this

Regal Finish

A New Technique... a scientific achievement now accents fabric beauty... creates a superlative texture in finishing effects on acetate, viscose, cotton and silk.

Parapon, meeting every test like a thorobred, has won professional acceptance and approval... justifying our own belief that it is indeed a **Finer Finish** ... realizing in a single forward stride, long sought effects to intrigue the eye and hand.

Powerful in penetration, ideal in wetting out properties, *Parapon* attains an unusual softness... a luscious, mellow drape.

Users of *Parapon* eliminate the danger of atmospheric oxidation, rancidity, or breaking down during the drying operation. It will save you time and money . . . do a better job.

Put *Parapon* to the practical test in your own plant. See for yourself the definite advantages of this new development. Write for a trial order today, or... if you desire more complete information on *Parapon* . . . we will welcome the opportunity to tell you all about it.

ARKANSAS CO. INC.
233 BROADWAY · NEW YORK

P A R A P O N

● Remember, years ago, when the best place to cool off was down by the old stump in the shade of the hickory tree? Who cared if the water *was* muddy and weed-strewn . . . it made a swell place for Summer dips!

But you can't figure that way nowadays. The water you use for the wet-processing of modern fabrics must be absolutely clear, soft, and colorless.

Ask any textile engineer. He will tell you that practically *all* mill water supplies must be properly filtered, or softened, or perhaps even further treated to enable finished goods of high quality to be produced.

Do you know that more than 1,000 textile mills are now using Permutit Water Conditioning Equipment? Immediate benefits have been gained. There are fewer reruns and rejections. Soap, soda, and bleach are saved. Boiler tube repairs and replacements are reduced to a minimum.

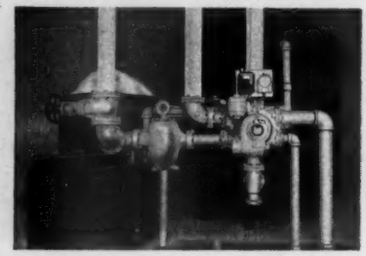
More important, finished goods are softer and smoother . . . and have an even, full-bodied color.

Such equipment saves enough to pay for itself in two years—sometimes in a single year.

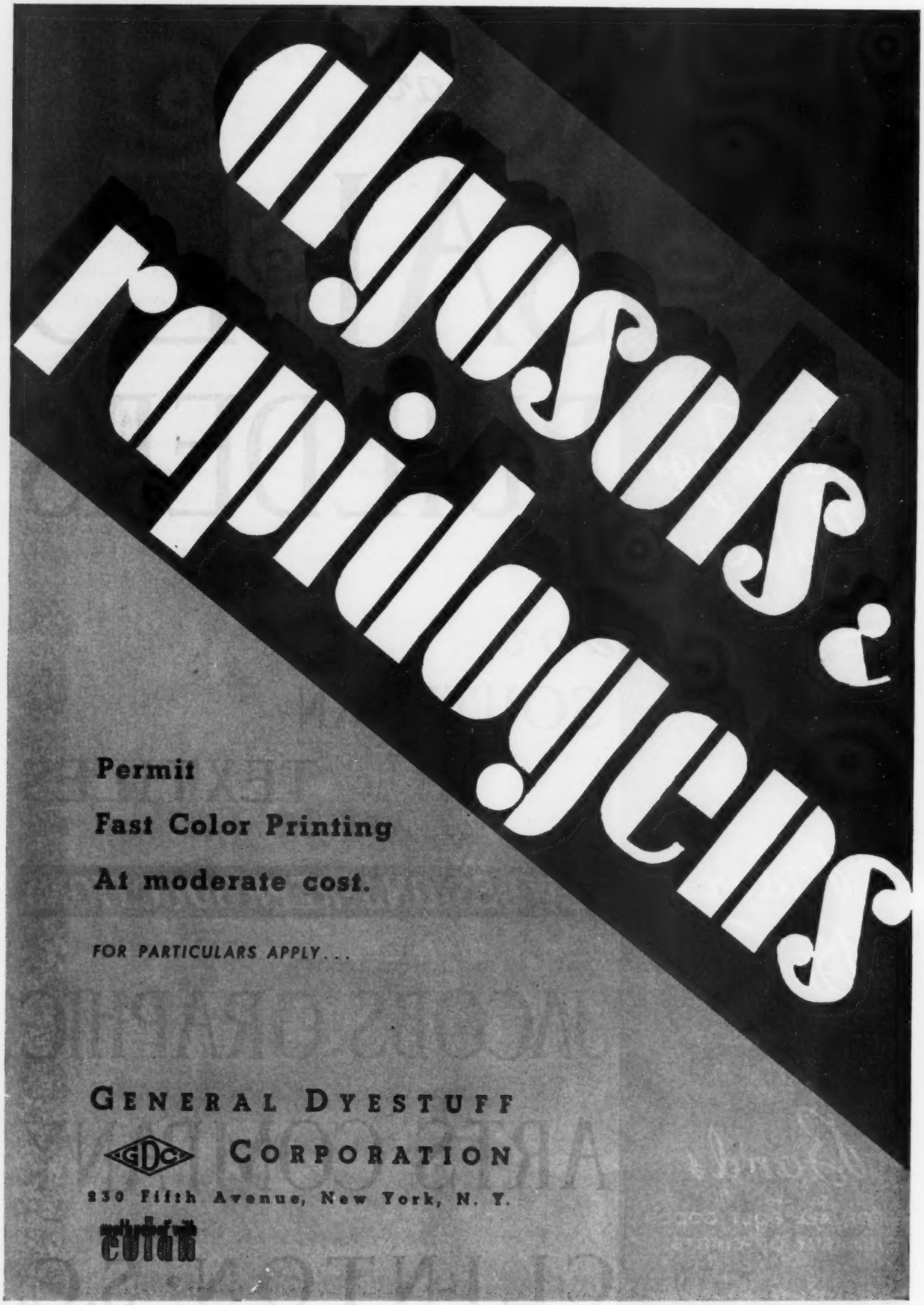
Why not write for our free booklet, "Reducing Textile Costs and Troubles"? You'll find it a valuable handbook of information. Write The Permutit Company, 330 West 42nd Street, New York.

Permutit

Water Conditioning Equipment



Modernize your old equipment. Install Permutit's new single-valve or automatic control, and refill your softener with Super-Zeo-Dur. This new greensand zeolite has been recently perfected . . . it uses less salt, and has 75% higher capacity for softening water than ever before. Write for details.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At moderate cost.
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These are

SALES BUILDERS

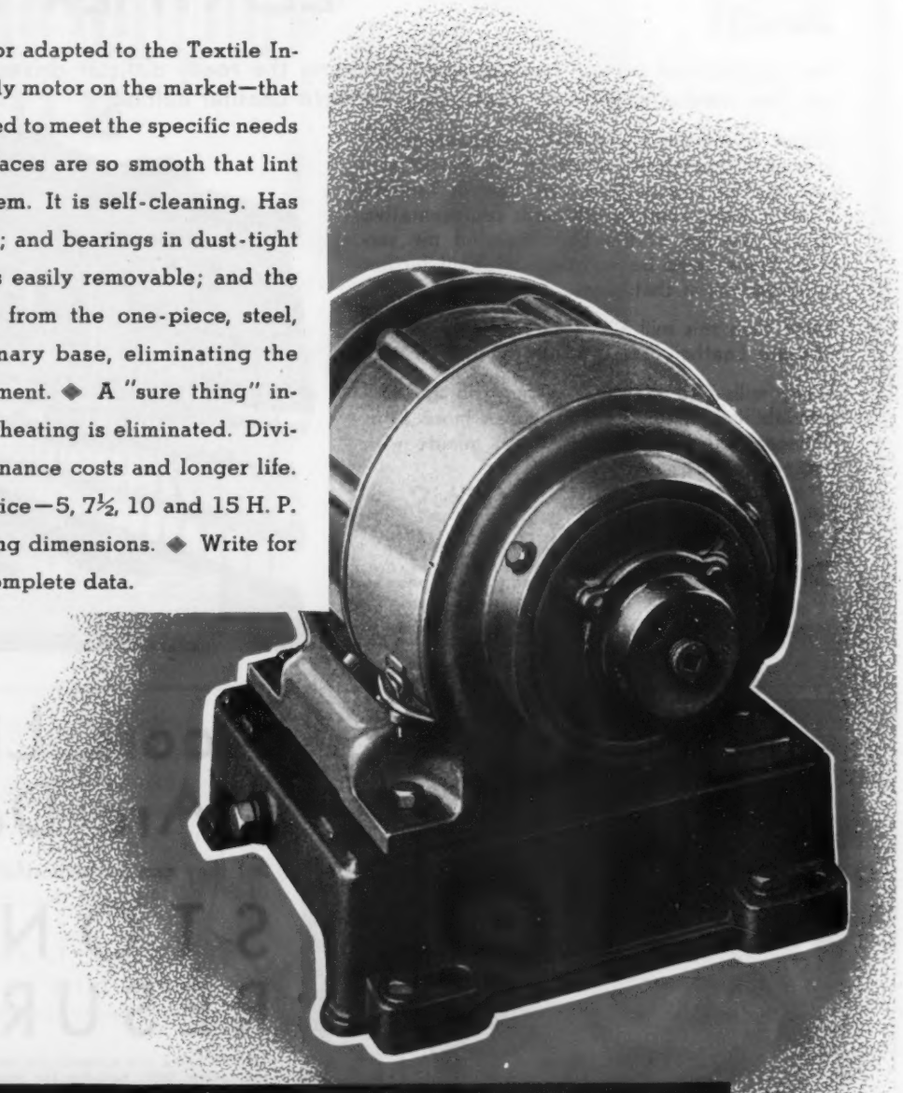
For
SOUTHERN TEXTILES

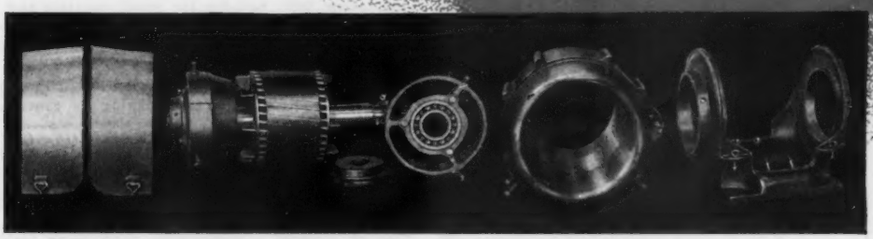
NEW DESIGNS · REPRODUCTIONS

JACOBS GRAPHIC ARTS COMPANY
CLINTON · S.C.

THIS MOTOR CLEANS ITSELF!

This is not an ordinary motor adapted to the Textile Industry. It is a motor—the only motor on the market—that has been specifically designed to meet the specific needs of the Textile Industry. Surfaces are so smooth that lint and dust can't adhere to them. It is self-cleaning. Has big unrestricted air passages; and bearings in dust-tight cartridges. The rotor unit is easily removable; and the stator is readily removable from the one-piece, steel, precision-machined stationary base, eliminating the time and trouble of realinement. ◆ A "sure thing" investment—this motor. Overheating is eliminated. Dividends in much lower maintenance costs and longer life. ◆ Four sizes for textile service—5, 7½, 10 and 15 H. P. Standard N. E. M. A. mounting dimensions. ◆ Write for new Bulletin 1172 giving complete data.





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MOTORS

QUICK-CLEAN

ALLIS-CHALMERS MFG. CO. MILWAUKEE, WISCONSIN

RHOADS TANNATE LEATHER BELTING

For mechanical power transmission, including the really difficult drives, there are few mediums, indeed, that equal Tannate Leather Belting.

About 15 months ago a textile superintendent, expressing his appreciation of the better service that he was getting from Rhoads Tannate Leather Belts, assured a Rhoads representative that if the life of the belts equaled the service, there would be no question about further requirements in that plant.

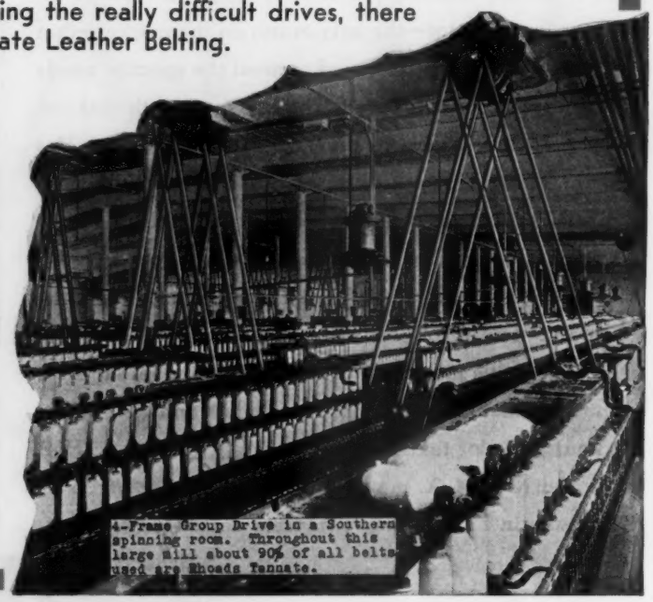
Since then this mill has ordered 47 additional Tannate Leather Belts, totaling 1210 feet.

Many mills find that the better grip and dependability of Tannate Belts mean more turns of front rolls and more picks per minute with consequent increased production.

J. E. RHOADS & SONS

PHILADELPHIA, 35 N. Sixth Street

NEW YORK, 102 Beekman St. ATLANTA, 88 Forsyth St., S.W.
CHICAGO, 26 N. Clinton St. CLEVELAND, 1200 W. Ninth St.
Factory and Tannery, Wilmington, Delaware



4-Frame Group Drive in a Southern spinning room. Throughout this large mill about 90% of all belts used are Rhoads Tannate.

Floors Like These Are Dangerous

But they can be successfully repaired or resurfaced with

STONHARD RESURFACER

Which meets the demand for an efficient and dependable flooring in the textile field, suitable for wood, concrete and other types of flooring.

STONHARD RESURFACER is easy to apply and will bond perfectly to the present surface without any preliminary preparation of your floors.

Fire resistant **Easy to walk and stand on**
Not as fatiguing as concrete

* * * * * * * * *

For dye-house and bleachery floors—"CONCRETITE."
For concrete floors beginning to show signs of wear and dusting, "STONHARD SURFACE TREATMENT" answers the problem.

Among our customers are more than 400 leading Southern textile mills and over 10,000 other industrial plants.

Tell our nearest representative about your floor problems—he is an expert. Let him arrange for one of our engineers to make a test installation in your plant.

STONHARD COMPANY

BUILDING MAINTENANCE MATERIALS

OFFICES AND WAREHOUSES IN ALL PARTS OF THE WORLD

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SOUTHERN SALES OFFICE
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ATLANTA, GEORGIA

Send for a trial drum and arrange for a demonstration in your own plant.
See for yourself what a truly remarkable product STONHARD RESURFACER is

YOUR MASTER MECHANIC AND SUPERINTENDENT SHOULD HAVE "OVER THE ROUGH SPOTS" ON FILE - ASK FOR IT

a $10,000,000,000.00 TEXTILE INDUSTRY

..anxious to please HER!

In the textile industry, our entire investment—our plants—our equipment—our labor—our production, have ONE objective . . . *to please Miss Buying Public.* We're selling a *feminine* market!

That's why beautiful fabrics . . . with clear colors—fine prints—and rich handle and appearance . . . have the best sales prospects. Improve your finish and you increase your sales.

ONYX compounds improve finish!

A finer finish is within reach of every textile manufacturer. You can obtain it by using ONYX textile compounds for your processing and finishing.

Every ONYX compound has been developed by *"specialists on finishing materials"*. Intensive research, careful manufacture and close mill contact, give ONYX compounds qualities unmatched by any on the market.

Prominent dyers, printers and finishers recognize the superiority of ONYX compounds and use them to get their fine finishes.

The advantages of ONYX compounds can be demonstrated in your mill, without cost or obligation. Write for an experienced representative to call with "proof of the pudding".

ONYX OIL & CHEMICAL CO.
Specialists on Finishing Materials.
Jersey City, N. J.
Southern Repr. E. W. Klumph, Charlotte, N. C.
Midw. Repr. Maher Color & Chemical Co., Inc., Chicago.
In Canada: Onyx Oil & Chemical Co., Ltd., Montreal.

Onyx LABORATORY-CONTROLLED PROCESSING & FINISHING COMPOUNDS

Convert this waste into savings...

Color changing consumes much valuable time. Re-dyeing because of "off colors" seriously delays production schedules. Tearing of fabrics eats heavily into costs. These losses can be converted into savings with stainless ENDURO equipment. » » » The action of the dyestuff will not stain or discolor the smooth surface of ENDURO, and a complete cleaning and changing of baths is, therefore, merely a matter of minutes. The smooth surface, too, eliminates any chance of harming even the most delicate fabrics. And "true colors" can be held, even where acid and acid chrome colors are used, for ENDURO is insoluble in all colors in the various concentrations used in dyeing. ENDURO tanks in service for over two years prove this point. » » » And there are other advantages to equipment made from this permanent metal which will interest every textile engineer and executive. They are all described in the folder, "ENDURO Textile Equipment." A copy is yours for the asking. » » » » » » » » » » »

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Republic Steel CORPORATION
CENTRAL ALLOY DIVISION, MASSILLON, OHIO
GENERAL OFFICES: YOUNGSTOWN, OHIO

ENDURO
REPUBLIC'S PERFECTED
STAINLESS STEEL

Vol. 99
No. 7

Robert W. Philip,
Editor

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COTTON

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A Topical Cross-Index of the articles published in COTTON during 1934 (Volume 98) is available upon request to readers who have a complete file of the magazine for that year. Due to a limited supply of copies, we cannot promise to supply copies of any of the issues of the magazine published during that year . . . . . .

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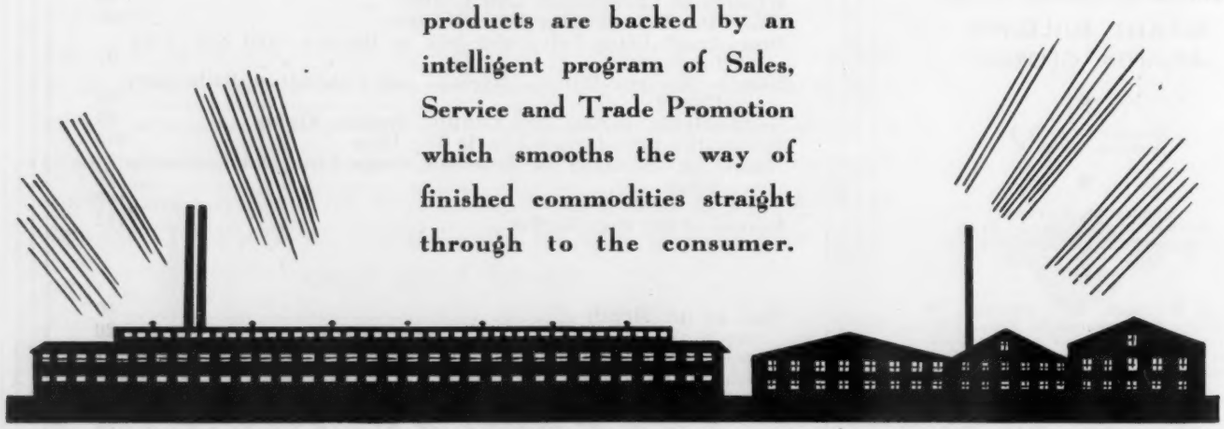

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Personnel and Employment Methods as Applied at Martha Mills

A competent discussion of personnel and employment departments for textile mills, and a detailed description of procedure as practically applied . . . .

By Sara M. Britt
Employment Manager, Martha Mills

THE purpose of this article is to discuss the subject of the personnel department for a textile mill, and to report the method of operating such a department, with particular reference to the employment department, at the Martha Mills.

There has recently been an increased interest in this subject on the part of many mills, and a great many questions have been asked about the general plan of establishing and maintaining such a department.

The fundamental purposes of this work may be achieved to a large extent, whether or not there is a specially provided and designated department with a full crew of workers in it; and this is particularly true of some of the smaller mills. But there are many of the medium-sized and larger-sized mil's without an organized form of receiving and interviewing and selecting applicants for iobs in the mill. We hope that all classes will find this discussion, which describes in detail the procedure at Martha Mills, of interest and value.—The Editor.

UNDERSTANDING is the solution to all human relations problems. Without it, employers and employees are to each other "just a lot of unreasonable so-and-sos" with whom no one can get along. With it, there is born in these human hearts of ours a paramount desire to live and to let live. There is not a person alive who has totally veiled himself against the possibility of being understood or who has completely destroyed the desire to be understood.

With this understanding comes the knowledge that there must be definite attractions in and around manufacturing plants if we expect to acquire the highest type of employee. The plant must be kept clean and comfortable, the wages must be high enough to maintain a decent standard of living, the houses should be kept painted and in good repair, and the grounds beautified with shrubbery and grass. There must be good schools and churches, so that the educational and moral standards of the community may be elevated to a desirable degree serving two purposes: first, the best of the present personnel is eager to stay and serve as high-class pace setters for the entire community, and those who don't fit will of their own accord gradually drift on to seek their level elsewhere. Second, the attractions will make new help eager to move in, so that new employees may be chosen with more care and deliberation and there will be less chance of getting the wrong people.

There are plants today which have had to completely abolish their personnel departments for no other reason than that they simply chose the wrong fellows to manage them. A friend of mine said to me some time ago, "Our personnel man acted as though he were chairman of the board and treated our supervision (superintendent and overseers) as though they were there to perform only some minor duties. There was absolutely no co-operation between that department and the plant, and we were forced to close the department or else disrupt our entire organization. Since then we haven't had a personnel department but we certainly see the need of one now."

The task of selecting the right contact man for the personnel department requires the personal attention and study of the management, for therein lies the heart and spirit of the entire organization. The person selected must be one who understands people, and I prefer not to use the term "co-operate with" people, for the real fine meaning of that word has been murdered by mis-use. Is it not true that we are still fooling ourselves into thinking that we are getting co-operation so long as our subordinates are doing what they are told to do? In this department there must be a profound desire to understand the viewpoint of every person with whom it comes in contact; then there will be no reason to worry about co-operation, for real co-operation is the natural outgrowth of understanding. Unless the personnel department has the approval of the people in the plant and of the entire supervisory staff, it will fail and for so long as it exists it will be a source of irritation to the organiza-

tion. This fundamental principle is most important.

It is very essential that the contact person understands the manufacturing processes of the plant in a general way; what each machine is and what it produces, and how much production is expected of each type of hand. For instance, let us suppose that a card hand comes in for a job and states that he has run as many as 20 cards on a previous job. Our job is set up for an operator to handle, say, 50 cards, and, the first impulse is to say to the applicant that he could not handle the job. But jobs at different plants are set up so differently. For instance, this man, when he was handling 20 cards, could also have had the duties of hauling his laps from the picker room as well as setting up the laps and doffing the cards. Whereas on the other job, on 50 cards, he would be expected only to see that they were kept running and to doff the cans. Of the two jobs, the latter is the simpler to run and the prospect would be delighted to take on the extra cards if he doesn't have to haul and set up laps.

Another example: A girl comes in and says that she is a spooler hand. She could mean that she re-spools, or it is possible that her experience is only with the old type of spooler, or possibly she has run nothing but automatic spoolers. If she is accustomed to the small single yarn hand knotter used on the old type of spooler, she would certainly need at least two weeks' training in order to learn how to use the double-ply yarn knotter used for re-spooling—and as for automatic spoolers, well, she would have everything to learn. The contact person must know the relative importance of each job and also know and appreciate the skill required to run each job.

There should be as few cut-and-dried rules as possible in the employment department. Every case, every person, every situation, must be handled individually. At best, the department should have only a general routine. Flexibility should be a watch-word of this kind of work, for I know of no one thing at which a normal person revolts more quickly than to the idea that he is being made to conform to hard and fast rules and routine, doing things precisely by the clock, being treated like a bale of cotton. When routine is paramount, personality is lost.

A personnel department has many direct advantages. There must be a complete record of every individual who works in the plant. Incorporated in this record are his application cards, physical examination, birth date, his service and attendance records, a record of how many times he has been out sick, how many in his family, the last three places he worked, and innumerable other details which prove valuable as a source of information while he is still at work in the plant. At the termination of an individual's service, the records are filed for future reference, and they determine largely whether or not that person is ever to be re-hired.

Working with the Overseers

My telephone rang briskly one day last fall and the twister room overseer was at the other end of the line: "Tom Brown came by to see me at noon, he sure is a good hand, and I'd like to have him back if it's O. K. down there." Tom had just called on me and his record had already been checked. I replied, "His work record is O. K., but he is the fellow that got drunk and shot out all the street lights last year; his house was left very dirty, and his children did not attend school very regularly." In a very surprised tone, the overseer answered, "Is that the same fellow? Well, I sure don't want him back, just let him ride." Otherwise, Tom Brown might have been re-hired and, in a short time have cost the twister department another turnover. It is impossible to rely on one's memory for all the details concerning former employees, because after three months it is difficult to avoid confusing the details of one operative's record with that of another, and it is so easy to keep from making the same mistake twice with adequate records available.

Below, Mrs. Britt, the author, is seen at her desk engaged in a typical interview with an applicant.

She devotes the entire time to the interview; details of filling out application blanks are left to an assistant. (Note section of files along wall, in which records are kept on every prospect and employee). . .

Another very definite advantage of the personnel department is that the production superintendent is relieved of the responsibility of seeing those dozens of unemployed who file in and out of a mill town each week. The head of the personnel department of a nearby mill town who had been having difficulty with his department asked me once in a very confidential tone, "What does supervision (the superintendent and overseers) think of letting someone else do all their hiring, and how do you get this method *by* the overseers?"

It so happened that just a few days prior to my friend's questions, the spinning overseer had dropped by my desk for a chat, and during the conversation he related the fol-

lowing interesting and typical experience:

"Those new spinners and doffers came in last night and they sure were Jim-Dandys. I can remember once a long time ago when I worked at the ..... Cotton Mills. I had just been made boss spinner. The superintendent called me and the other boys in and said we had just gotten a big order. We had been running short a pretty good while and about a third of my spinning frames were still sewed up in burlap. I shall never forget how I felt when he pointed his finger at me and said 'Jim, I want those frames ready to run and enough help to run them by next Wednesday', and mind you, I had just one week in which to do the whole job.

"The days of that week I spent at the plant, and at night I would ride as fast as my Model T would take me 'rounding up' the new help. I had to do this job myself, because I wanted to take a good look at the folks I was about to work and move into the village. Each morning of that week I would drag slower and slower into the superintendent's office to make a report of the luck of the night before. The day arrived when the first roving was banking up in the spinning room. My help was new and I didn't have time to coach them; all I could do was to take their word as to their ability to spin or doff.

"The wheels began to turn, grinding out the extra production, and I was completely exhausted, absolutely unable to run my job efficiently. When I look back and think what a struggle it used to be to get new help, and realize that now all I have to do is to tell you how many hands I need and you just send for them—well, it's quite a difference."

Discussing New Help with the Overseer

The reason Jim and the other overseers are confident that a good hand will be called in is that no application is taken by the employment department without the approval of supervision, and no person is sent for until the overseer has had an opportunity to look over the application and discuss it with the employment department. One cannot hope to keep help hired by the "rounding up" or "hired-on-sight" methods, for it is a reasonable certainty if they would move on such short notice to one mill, they could just as easily be enticed on to greener pastures.

The indirect advantages are more difficult to describe but they exist, nevertheless. We will all agree that employees and prospective employees need someone in the plant with whom to talk, and who apparently has nothing to do but listen. The employee may have a complaint, a misunderstanding with supervision or fellow workers, and so often the personnel department, by playing the roll of go-between and peacemaker, can adjust both parties to a common plane of understanding and help to abolish a grudge which might otherwise have simmered on for months.

Maybe another one just wants to unload to someone about his meddlesome in-laws. A few days ago I noticed a boy waiting to see me; I motioned to him several times that I could see him next, but each time he shook his head. Finally it occurred to me that he wanted to talk with me very privately. As soon as the office was cleared, he came over and sat down, glancing about nervously to make sure no one else was listening. "You see, it's this way, me and my wife were getting along swell but a couple of weeks ago her mother and father blew in from South Georgia, and they are the most meddlesome old folks I ever saw. If I don't get them out pretty soon, I'm checking out myself, and I don't want to do that, 'cause I like my job and I want to stay."

Miss Katherine Yates, who is Mrs. Britt's assistant, filling out the application card of the applicant.

He drew a little closer to my desk as he neared his point, "My wife's all tore up over it too, and if you could just send a note down there saying that you don't allow two families in the same house, I sure would thank you."

A week later he dropped back by the office, beaming. "You know, the city manager sent me a note about my in-laws and they decided they better go back to South Georgia. We are getting along fine again, and I can't ever thank you enough for helping me out." No matter how important or how trivial, we must listen to and make friends with the help for the company.

A prospective employee is sure that he needs the next job worse than anyone else in the world, but whether he gets it or not, he appreciates a good listener to his tale of woe and will surely be a booster for the company if he feels that he gets a square deal in the employment department.

The employment department is primarily a record-keeping department. The *method* of keeping these records is not important so long as they are accurate, complete and practical. The record which deserves the most attention and ranks high in importance is the application file. The employment waiting room is full of people sitting around reading waiting for an interview. Some will make good help, others are undesirable. Just how shall we go about selecting the sheep from the goats? One cannot look at a person and determine finally and conclusively whether or not

OCCUPATION

Name _____ 1._____ 2._____ 3._____

Address: Local_____ Home _____

Renter's Name_____ Relative—Yes_____No_____ Been There_____

References:

	How Long	Dept.	Reason
Last Pl. Worked_____			
Name _____			
Address _____			
Name _____			
Address _____			

Worked here before? Yes_____No_____

Relatives worked here before:

1._____ 2._____

3._____ 4._____

No. in family_____ No. to work_____

Name	Age	Occupation

Housekeeping and Premises:_____

Had Phy. Exam. here: Yes_____No_____

Cripples or disables in family?_____

P. A. G—F—P. Education_____

Change of Address:

1. _____

2. _____

Date Interviewed_____ By:_____

Hired_____ Dept._____ By:_____

Signature: _____

The application card, which is signed by the applicant . . .

he will make a satisfactory operative. The prospect must be questioned and coaxed into talking freely, and tried out on the job before a selection can be made.

Interviewing is the most difficult and interesting part of the job. It is the variety feature of the program which takes the monotony out of the work, for each person who comes in for an interview is a new case and must be treated differently. The little man from the nearby farm comes in with his habitual "You haven't got no job for me today, have you?" and I oblige him by saying "No", for the chances are that he would also be completely negative on the job.

Then another one, a brisk young fellow, states that he can do *anything* in the card room, and after a little questioning I find that he can only lay up roving, haul drawing, and has possibly had a little experience doffing frames. This boy lives 50 miles away, and it would not be fair to local boys to hire those from out of town on jobs which require no experience, and it would be unfair to this stranger even to allow him to leave his application, for it is evident at the time of the interview that we will never have occasion to send for him.

On and on, the jobless come and go, some of them sincere but undesirable, others deliberately misrepresenting facts, others shiftless, some born beggars using as their first means of approach hard-luck stories to appeal to the sympathy, and it is a waste of time to consider such people for future openings.

Then comes the clean, well-mannered, intelligent prospect. As he walks from the waiting room to the chair by my desk I notice that he handles himself quickly and with assurance. Once he is seated, we discuss the job in which he is interested, his experience on that type of work at each of the places where he has previously been employed. If he has worked at our plant before, his old record is immediately checked, and if he made a poor record we send him on his way. If it was O. K., we proceed with the interview.

It is best never to hurry a prospect through an interview, else it will not be possible to get him to "open up" and thus fail to get all the facts. Direct questions should be avoided if possible, rather he should be led toward such discussions as will prove interesting and valuable. For instance, we might suggest to him that we had never seen the plant at which he says he has just been employed. Immediately he begins telling all about that plant, the things he liked about it as well as the things he didn't like, why he left and whether or not he would ever want to go back. Then we might say to another that we are proud of our school system and are sure he will be pleased to have his child attend. He then tells us that his child is an invalid and that it requires all of his wife's time at home looking after this child. In this way we get answers to un-asked questions which definitely determine whether or not we take his application.

If the prospect meets with the interviewer's approval, he is shown the job in actual operation. The prospect must sell himself on the job and place, else he doesn't stay sold. He may become discouraged when

we tell him the wages he will earn, or be discouraged when he actually sees and tries out the job, but it is far better for all concerned for him to make his decision at this time than to wait until after he is hired. When the prospect goes up to look at the job he is given a note to the overseer, which is in reality an introduction and a request to show him the job and to try him out. After the overseer has seen him work, without any discussion of the job, he calls the employment office and gives his frank opinion of their selection. Sometimes the report is good, sometimes he disapproves. The opinion of supervision is always respected highly, and with the employment department working together with supervision, as I know it is possible to do, the chances for making poor selections of prospective employees is lessened 50 per cent.

The prospect returns to the employment office. If he failed to receive the O. K. of supervision he is told that it will not be necessary to leave his application, as we do not believe he will be able to handle the job, etc. If he was O. K., he is given a definite chance of expressing his opinion of the job and asking that his application be taken.

At this point in the interview I like to present a few of the advantages we have to offer, viz., educational advantages, insurance plan, retirement plan, savings plan, vacations, wages, etc. It is very necessary that the method of handling applications which are left on file be explained to each person leaving his application, also the order in which prospects are called in for jobs. When the prospect understands our attitude toward applicants, he is willing to notify us of any change of address and not make repeated and unnecessary visits to the employment office, because he is sure he will be called in when it is his time to be given a job.

A definite application card, (as shown in the accompanying cut) is then filled out in detail by an assistant, as I find that I can do a better job of selecting if I am not busy writing and the assistant takes a more complete application as she is concerned only with taking full data for future reference. This application card is always signed by the applicant. This has an advantageous psychological effect upon the applicant because he feels then that he has definitely left a part of himself with us when he leaves his signature. This also determines, without asking the point-blank question, whether or not the applicant can write, for at this plant no one is hired unless he can read and write.

As will be noticed on the application card, there is a space for designating the last place the applicant worked, also two additional spaces for references. In most cases I find it necessary only to contact the last place worked, however, on account of insufficient information from this source, the other references are sometimes called on for supplementary opinions. I prefer to use a typewritten letter of inquiry, as I find that no one form letter that I have ever seen is applicable or will serve to be used for every applicant.

While talking to the prospective employees, one applicant is suspected of using alcohols to an excessive degree, while another states that he left his former employer because his job shut down; another may claim to have worked on his latest job two years. We find it valuable to write an individual letter bringing out the particular points about which we desire specific information. From the viewpoint of the person to whom such a letter is written, he is inclined to be more generous with his opinions and information from the record of the operative if he is shown the courtesy of being written a personal letter, addressed to his attention. The old mimeographed form letter has had its day and in all probability served its purpose well, but it is now an antique. After references are checked with former employers, the card, together with the letters of recommendation, are put in the live application file. If this file is full of reliable prospects, it is a real pleasure to get requisitions for help, because we won't be hiring strangers but friends of several months' standing.

(Editor's Note.—The second and concluding installment of this article, to appear in next month's issue, will continue the discussion of the actual operation of an employment department, starting first with a description of how the service is used when a department needs new hands, and discussing the procedure by which requisition cards are filled out, prospects notified of openings, physical examinations conducted, new employees actually signed up, etc. The next installment will also describe this plant's procedure as to skilled and unskilled employees, handling absentees, working up the turnover report, how promotions are handled, etc., etc. It will aid in the understanding of the second installment if the present one is retained and filed for reference along with it.)

Corn Products Opens New Sales Offices

Corn Products Sales Company, with main southern office at Greenville, S. C., have established an office in Greensboro, N. C., Rooms 824-825 North Carolina Bank Building. This office is in charge of W. R. Joyner, who will continue to contact the North Carolina and Virginia trade as he has been doing for the past five years. All business pertaining to the North Carolina and Virginia trade will be handled through the Greensboro office, which will operate under the supervision of the Greenville office, of which John R. White is manager.

Corn Products has also established offices in the Hurt Building, Atlanta, to give better service to customers in the textile and paper industries in Alabama and Georgia. This office is in charge of C. G. Stover, who will continue to contact the same trade as in the past, and all business pertaining to the textile and paper trades in Georgia and Alabama that Mr. Stover contacts will be handled through the Atlanta office.

Also, the company has opened offices in the Comer Building, Birmingham, Ala., to serve customers in the textile and paper industries in Tennessee, Mississippi, Louisiana, Florida, Arkansas and part of Alabama. The Birmingham office is in charge of L. H. Kelley, who will continue to contact the industries he has been contacting for some time past.

The Atlanta and Birmingham offices will, with the Greensboro office, operate under the supervision of the Greenville office.

Winn Visits England

Herbert J. Winn, president of Taylor Instrument Companies, Rochester, N. Y., recently made a five-weeks business trip to London. A major part of his time while there was spent at the plant of Short & Mason, Ltd., manufacturing distributors of the Rochester firm in Great Britain.

THE SLASHER ROOM

By Joseph W. St. Rock

THIS begins a continued discussion by a practical mill man of the slasher room, its equipment, methods, etc. This installment covers the general subject, with comment on the importance of temperature regulation, etc. Subsequent sections will discuss in a practical way the various parts of the slasher, their operation, maintenance, repair, etc. We suggest that the reader clip the several installments, beginning with this one, for filing . . . . . .

THE slasher room is one of the most neglected and yet one of the most important departments in a weaving mill. It is certainly true to say that the slasher room is the bottle neck of the mill. It is in this department, as most men should realize, that the best of work in the preceding processes can be and often is offset by improperly maintained and controlled equipment and conditions and lack of attention on the part of the men in this department.

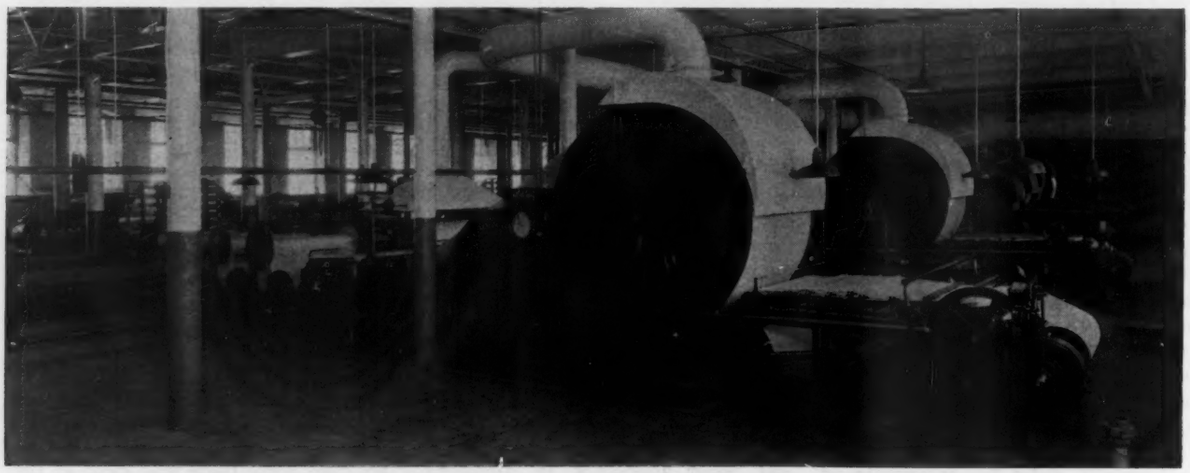
All mill officials strive for good work, but there has always been a tendency for them to overlook the part that the slasher room can contribute toward this end. Many men will always see that the picker room is mixing the cotton properly and producing as good a lap as possible; that the cards are ground regularly and the card clothing kept sharp, and that the frames in the carding and spinning departments receive the very best of attention—but winding, spooling, warping and slashing seem in many cases to be considered as the red-headed step-child, something to be tolerated, and then the weaving department is expected to turn out cloth of the best quality. I do not mean to say that the slasher room is to blame for everything that turns up bad in the weave room, because I know from experience that "the weave room is never to blame for anything; it's only the slasher room." But isn't it true that five minutes of bad running on the slasher will cause much bad running in the weave room? Then, why neglect it?

The slasher room should be a department in which first-class employees are used; they should be intelligent, wise and alert. If the overseer of this department is an office seat-warmer, or just a roamer, he is a bad asset to the corporation. An overseer can be in his department 90 per cent of the time, but if he is not given the opportunity to employ skilled help, he will sooner or later find himself in a mess. Also, an overseer who depends on his second hand or slasher men to too great an extent will find himself in the same predicament. Have you ever been through a mill where the superintendent at one time in his earlier days was even only a helper in the slasher room? Have you noticed the difference in that mill and others?

I venture the assertion that if you will go into the mills making the highest quality cloth, you will find their slasher rooms operated on a scale which might seem to be expensive, but when the quality of the cloth is taken into consideration, the total mill producing cost is much lower due to the greater revenue on first quality cloth. I can and will later in this discussion show the effects of high and low cost of the slasher room upon the total manufacturing cost of the mill.

The Slasher Room Personnel

The slasher might also be considered as the adding machine of the mill, and yet it is more useful there than is the adding machine used in an office. Its results should be as nearly as possible as accurate as those of the adding machine. In case you

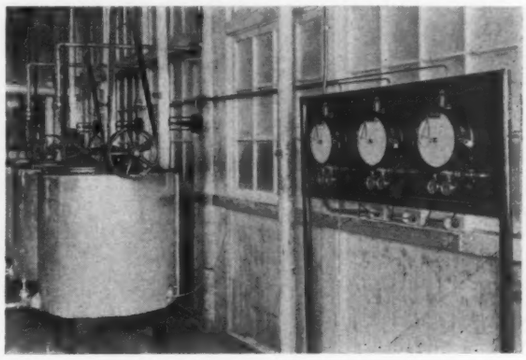


Courtesy, Saco-Lowell Shops and Taylor Instrument Companies

A recently-announced slasher with new principles, equipped with double creel, stretch control, and complete temperature control devices . . . . . .

feel that this comparison is a little overdrawn, are not the ends on the section beam added together to give the right number in the warp? Isn't the size added to the yarn at the slasher? The section beams represent the keys of the adding machine and the size the lever. Depress the wrong key on the adding machine, or fail to pull the lever to its full stroke, and the result will be wrong. Likewise, on the slasher, if a section beam is used with the wrong number of ends, or the size is not balanced for the yarn being run, the result will be wrong and waste will be made. A careless operator on either machine will result in an error which will be found expensive.

A good slasher man should do his work conscientiously. He must always be on the alert, and so must his helpers; they must be trained to look for something going wrong at all times; they must assume that something is wrong and be looking for it. For a slasher helper, a man must be chosen who has ambition and who is willing at all times to render aid to the slasher man, so that he himself will be trained to become a slasher tender. And the slasher tender should not be of the type who feels that he is the only one who can do the work. The helper should be ready to replace the slasher tender should the latter quit or become sick. The size man should also be of an intelligent type, because upon him depends the accuracy of the size mixtures for good work. The duties of the personnel of the department will be taken up later.



Courtesy, The Foxboro Company

A modern size-cooking room, with temperature control . . . . . .

The Equipment of the Department

The equipment of the slasher room, whether it be a large one or a small one, should be well kept in repair. A fault found in a great many mills is that the weight of the slasher itself is depended upon to keep it where it is placed. It is heavy, true enough, but the vibration of the building, the trucking of warps and section beams, etc., all have a tendency to create an out-of-line condition. The best method is to use lag screws to the cylinder stands as well as the head stock, and also the size vat. The slasher when set up by the builders is so aligned that when all gears connecting to the side shaft are loose, the side shaft will turn freely in its bearings by hand. With all gears fastened, all parts of the slasher should be so easy to turn that one could with very little effort turn the power pulley by hand and cause every part of the slasher that must turn to turn easily, even when a set is in the slasher.

The steam line leading to the slasher should when possible be laid so there will be a straight line with the least possible number of elbows. A strainer and reducing valve should by all means be installed with a drain on the outlet side of the reducing valve at the end of the line. A separate line should always lead to the slasher room. A branch line connected just ahead of the reducing valve should lead to the size room so that the pressure will be as near boiler pressure as possible. The reason for this will be explained when we come to discussing the cooking of size.

The Importance of Proper Control

Size kettles, both for cooking and storage, should for best results be covered with asbestos. And, by all means, the kettles as well as the slashers should be equipped with automatic temperature control and recording instruments. There is nothing more essential to slasher room equipment today than automatic temperature control instruments. We have had the opportunity in more than 24 years of experience, to operate slashers with and without temperature control instruments, and I think that if a slasher room is not equipped with these instruments, the mill is making a great mistake.

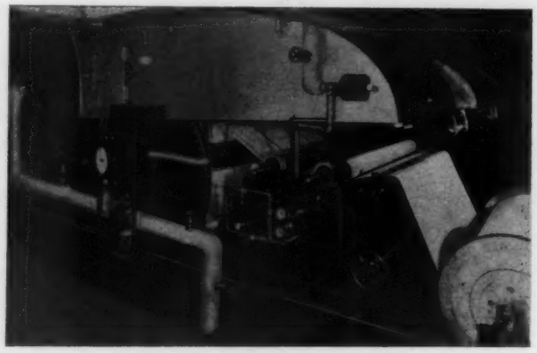
A slasher room today must be operated scientifically if best results are to be obtained. Some readers must remember some years ago when manufacturers were making their own sizing material, what is known to most mill men of today as gums. You remember how it had to be mixed and left to ferment before being used; and this was not so long ago either. I remember having 30 containers spread along the windows so that the sun would strike it and ferment it sooner. Each container was dated and used in its turn. Those were the good old days, some may say. But in those days there was no competition—the old hot air slashers were being used—and if the slasher tender slashed six warps a day working 11 hours, no fault was found. When a weaver had to take care of six looms, a warp that was not so well sized would not be thought of, and the cost of the department was never mentioned. A slasher tender would wait for several hours a day for his set, and there would be no time lost. But today we have a different problem with which to deal. There is cost and competition to consider, a weaver has more looms to look after, officials are after quality and they cannot be blamed for this. To accomplish the desired results science had to enter the field of slashing and unless one has the right kind of materials with which to work, the proper results cannot be expected.

Cooking the Size

The cooking of size for best results is like cooking a pudding for a good flavor. For instance, a woman prepares a pudding mixture and cooks it in a cooking pan over the stove until it is cooked. She stirs the mixture constantly, and the stirring will

have to be increased to prevent it from burning, yet most of the flavor will be lost. But if she prepares a like mixture and cooks it in a double boiler, stirring will take place but not so rapidly as in the other mixture, and the flavor will be far superior—because of the slower cooking giving the powder more time to mix for the same amount of stirring before it is cooked. Size cooked under the watchful eye of a control instrument is of better quality than that cooked by hand control for the same reason. The cooking of size under hand control brings the boiling point too soon because steam is admitted to the solution continually; while when it is cooked with the automatic control steam is added intermittently, bringing the temperature up in stages, giving the mixture a longer time to mix before gelatinizing.

When the boiling point is reached too soon the starch granules cannot mix with the water and other ingredients so well. For example, potato starch will gelatinize at approximately 145 degrees F. Now, if this temperature is reached in 10 minutes, the starch granules will not be broken up as evenly as when this temperature is reached in 20 minutes. Some slasher men will say that they agitate the mixture 15 minutes before applying the steam. This is good practice but it is not necessary when control instruments are used which will admit steam to the batch for five minutes at the start, to as low as six seconds at a time during the entire cooking, being closed for from four seconds to 30 seconds between each opening.



Courtesy, Powers Regulator Company
A size box application of temperature control

A number of tests taken in cooking size show a temperature of the mix at the start of 52 degrees F., with steam applied and the flow of steam continuing before being controlled 4 minutes and 40 seconds, closing and opening intermittently 23 times in 20 minutes. Steam was observed to flow to the kettle for an average of 20 seconds per opening, and being shut as many times as opened, with an average of 30 seconds being closed at one time, and attaining a temperature of 160 degrees F.; then 25 openings to attain 180 degrees F. in 9 minutes and 45 seconds; being opened at an average of 12 seconds at one time and closed at an average of 13 seconds at a time; the longest opening being 18 seconds and the shortest opening 5 seconds. Then for 20 minutes, 16 openings to attain a temperature of 210 degrees F.

By cooking a size mixture slowly as described it can be plainly seen that the size will be more thoroughly mixed than when cooked by hand control where the temperature is brought to a boiling point in 10 minutes and held at about that point for the next 30 minutes, and everyone will agree that a better size can be had in the way described. In cooking size with a hand control, one has to constantly keep in mind the mess that will be made if he forgets the steam for a minute. Where a control instrument is used it is set and forgotten, and this gives the size man ample time to do other work without running the risk of boiling over. A signal light will show that the size is ready to use.

Temperature Control on the Size Box

If the size gelatinizes before all starch granules are broken up, there will be found little balls of starch surrounded by size. These can be detected in the size vat, as they appear in small pieces of white specks coming up with the yarn on the size roll. Many slasher men believe these small white specks are the skin formed on the size as the size cools off, broken up again when re-heated. But most of them, if broken up and examined, will be found to contain pulverized starch that was not dissolved during the cooking.

A constant temperature of the size in the size vat on the slasher is very essential. It is a well known fact that if the temperature of the size is kept uniform that it will penetrate the yarn much better and its viscosity will remain the same or more nearly the same as when it was received from the storage kettle, assuring a more evenly sized warp. These conditions can be better obtained with temperature control which will keep the size to a temperature of not more than two degrees above or below that desired. This cannot be obtained with hand control regardless of the ability of the slasher man. Under hand control the viscosity of the size changes so that different plants adopt different methods to keep the size right; that is, it is supposed to be kept right. Some will thicken the size with cold raw starch, this being a mixture of the starch as it comes from the bag with cold water; some will add alum; some believe that by adding wax to the mixture the size will keep its viscosity where desired. What does the finisher say about the use of the last mentioned product? When the cloth is de-sized for finishing it will sometimes require extra processing. Many a difficulty in finishing can be traced to the slasher room, and many a weaving difficulty could be eliminated and the quality increased by the use of temperature control, properly applied, at the size box as well as on the cylinders.

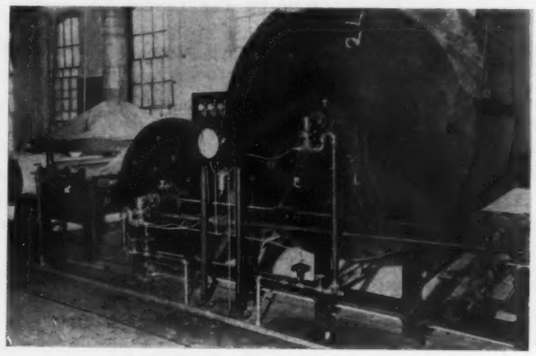
Controls on the Cylinders

Controlling the temperature in the cylinders is another very important point. Where the temperature is controlled in the cylinder, there is a saving of steam and the possibility of baked size on the yarn is eliminated, with a more uniform content of moisture remaining in the yarn. I have been able to get good results without temperature control, but nothing to compare with the results secured with control instruments. Slashers have been found running with

a temperature of 10 pounds of steam in both cylinders, before installation of the instruments, and afterward, the same identical style will run with less than one pound of steam on the large cylinder and a trifle more than 1½ pounds on the small cylinder. I will give proof of this later.

I must say that if the size vat is equipped, but not the cylinders, or vice versa, best results cannot be obtained.

With the proper control instruments, whether the slasher is run on slow or high speed, the temperature will always remain the same. Without them it matters not if the slasher is equipped with a lever to actuate on the regulator valve lever with the shipper rod—the temperature of the cylinder will vary. When the slasher is stopped for doffing, the steam is partly shut off and the temperature will fall. Once the size on a sheet of yarn is baked by too high a temperature, it will regain moisture only to a small extent and cause bad weaving. This is one of the reasons why the question comes up, "Why does part of one warp weave good and at another point weave bad with the yarns napping?" This is because it is brittle, the cloth feels gritty, etc. The answer is that the temperature in both the size vat and the cylinders is not uniform. One may say, "I have control instruments and still this happens in my mill." Yes, this will happen in any mill with control instruments not properly applied and cared for.



Courtesy, Taylor Instrument Companies

"The cylinders must also have temperature control, for best results" . . .

One must be trained in the proper functioning of these instruments and such training is always given by the builders. These instruments are delicate and sensitive. They will work properly under the supervision of one man, but if another man is given charge who does not understand them it will take but a very short while for them to go wrong and very often the man previously in charge is blamed for neglecting them, but if the matter is investigated and the blame properly placed, one will learn that when installing these instruments and a change in personnel is made, the new man should be properly trained.

The Squeeze Rolls

The condition of the squeeze rolls is of great importance. The first, often called the front roll, should for best results be covered with a good strong cloth. There are several methods used for fastening this cloth on the roll. Some men will bore small holes in a straight line the entire length of the roll, and insert wooden plugs and tack the cloth to these plugs with tacks. The size will rust these tacks, the tacks will rust the cloth and it will tear, and the rust thus formed will in turn rust through the burlap blanket and make soft spots in the blanket and the result is an earlier renewal of the blanket than should be the case. The method that has given me the best results is as follows: If the roll is smooth, a rough cut is taken across the entire surface. White lead, undiluted, is applied to the entire surface. The cloth is then rolled on very carefully, white lead is then applied to the end of the cloth for say about 1 inches. This cloth should measure about three yards in length and is lapped over and then allowed to stand for several hours or over-night. Two pieces of burlap, equal in width to the length of the roll and about seven yards in length, are soaked in cold water over-night which will shrink the burlap. This is preferred to letting it shrink on the roll.

In winding on blankets, the set is not tied in, and the yarn is pulled back of the drag roll and the warp removed from the slasher. The cylinder gears are uncoupled. Winding on in this manner is far superior to that of winding on by hand.

When rolling the burlap on the roll a lap should be formed from the point almost to the white lead on the cloth. The roll is then let down on the size roll and the slasher started on slow speed and the burlap allowed to wind on the roll. The second piece is then applied in the same manner and started with a lap of about a yard. Winding the burlap on in this manner makes a more even roll. It is bad practice and very expensive to substitute slasher cloth on this roll for burlap; no better results can be obtained with it.

The finisher roll is covered with a piece of cloth, and one five-yard piece of burlap as mentioned for the front roll, but the burlap is followed by two pieces of slasher cloth about six yards long.

When renewing a worn piece of slasher cloth, the new piece should always be placed nearest the burlap. Always have the older blanket for the top, as the older piece is better seasoned and cuts off the size better and no slipping of the yarn between the squeeze roll and the size roll will occur.

A well seasoned slasher cloth is brown in color.

A good method to adopt when a new slasher cloth is needed for the finisher is to wind the new blanket on the front roll for several days. This will stretch the blanket and when it is used on the finisher roll will cause no trouble. However, when no well seasoned piece of slasher cloth is available, a piece of light construction cloth is wound on the slasher cloth, say two turns, and left there for several days or until the size roll will not slip. The condition of this roll should be closely watched. Some plants adopt the method of removing them every day and replacing them in the morning.

There is nothing to be gained by this practice, as the roll is too soft and the slasher has to be run more slowly and a loss of production results.

Others run them too long before they are washed

and they harden so they will hardly cut off the size and bad warps result.

If the sheet of yarn is carefully watched as it emerges from the size box, one can with very little training see immediately that the size is not being cut off properly, by noticing the wet streaks and spots on the sheet, the yarn will not dry so well and will be full of hard size.

Under ordinary conditions with favorable running the blankets should be removed at intervals of about three to four weeks, sometimes oftener, and the slasher man should be a good judge of this.

There are several methods of soaking and washing the blankets. There I want to remind the reader that only the slasher cloth blankets are removed for washing. The best method is to procure a tank of some kind that will hold about 200 gallons of water. An old size kettle is very good for this. This kettle is placed in some convenient point in the slasher room, with cold water and steam lines leading to the tank. It is a good idea to have an over flow and a drain connected as this provides a better means of cleaning it after use. Another addition to this tank is a good strong wringer.

The idea of washing these slasher blankets is to remove the size that has penetrated them as this causes them to become hard. When washing the water in the tank should be brought to a boiling point and the blankets placed in the tank. Steam should never be applied to the tank while the blankets are still in the water, because if the steam comes in direct contact with the blankets it will burn them, perhaps unnoticeably to the eye, but this will sooner or later show up while the slasher is running by not cutting off the size in spots, and hard sized spots will be the result.

(To be Continued)

Plan Chain of Woolen Mills in Texas

The Texas Woolen Mills Corporation, Burt Building, Dallas, Texas, have been organized and granted a charter for the purpose of erecting several woolen mills in the state of Texas, thereby consuming and utilizing one of the state's largest supplies of raw material. M. C. Cotton is president, with C. W. Hughes as his assistant. Charles F. Burney, a graduate of the Georgia School of Technology, and well known for years in the manufacturing and merchandising fields of textiles, is to be vice-president, and will have charge of the merchandising of the company's proposed plants. E. B. Boyd is to be in charge of manufacturing.

The first unit, to be located at Orange, Texas, has been financed, and, it is expected, will be in operation by the end of the year. This will be a 10-set plant of 100 looms, 70 broad and 30 narrow looms, with approximately 7,800 spindles. The site of the plant has been secured, and a two-story building, approximately 400x200 feet, will be erected together with a 200x100 foot building to house the scouring plant. Other mills are planned for San Angelo and other Texas towns.

Medart Appoints Kendall

The Medart Company, manufacturers of power transmission machinery, St. Louis, Missouri, have announced the appointment of Roy C. Kendall as general sales manager. Mr. Kendall formerly represented The Medart Company in the state of Wisconsin. Previous to his becoming associated with Medart, he was connected with the Link-Belt Company for more than 15 years.

One Good Modernization Leads to Another

A modernization program undertaken in the first half of 1934 by the Riverside and Dan River Cotton Mills, Danville, Va., involving replacement of 460 old belt-driven looms by new high-speed looms individually driven by General Electric loom motors, effected such considerable savings in production costs during the first six months' operation that the mills have now embarked upon a similar modernization of 481 additional looms.

Of the 460 looms installed in 1934, 360 were 176-p.p.m. 48-inch looms replacing a similar number of the old 140-p.p.m. 50-inch looms, and 100 were 136-p.p.m., 72-inch looms replacing 132-p.p.m., 56- and 60-inch looms. Each of the new high-speed looms, including the additional 481 now being installed, is equipped with a 1-hp., 1,800 r.p.m. General Electric loom motor.

Clark-Jacobs Advertising Agency Formed

William P. Jacobs, secretary-treasurer of the Print Cloth Group of Cotton Manufacturers and of the Cotton Manufacturers Association of South Carolina, recently announced the formation of a new advertising agency, Clark-Jacobs, Inc., with offices in the Graybar Building, New York City. Mr. Jacobs is vice-president and treasurer of the new company, of which John C. Clark, well-known advertising and business man, is president. For a number of years Mr. Jacobs has been one of the outstanding leaders in the textile and drug fields, and has been active in these two industries in general work having to do with public and political relationships and advertising censorships. Mr. Clark for many years has been president of the Wylie B. Jones Advertising Agency, a successful manufacturer, vice-president and director of the Marine Midland Bank, Binghampton, N. Y., and president of the Endicott Land Co.

In speaking of his association with Mr. Clark in the new enterprise, Mr. Jacobs stated, "We both have felt that there is a growing demand for a new type of advertising service; a steadily increasing need for an unusual type of advertising counsel based upon sound logic and an adjustment to present-day circumstances. Pooling our experience with that of otners who will be associated with us, we feel that we shall be able to offer this type of service."

Carleton A. Cleveland and Frances Ward Rice are vice-presidents of the new company.

New Fade-Ometer Bulletin

Atlas Electric Devices Co., Inc., 361 West Superior St., Chicago, Ill., have issued a new bulletin describing the latest model, Type FDA Fade-Ometer. This equipment faithfully duplicates sunlight fading, it is explained, and the bulletin carries a table of sunlight equivalents for various seasons. The equipment permits testing of various size specimens, in steps or stages, and permits control of temperature and humidity, providing a testing chamber suited to any material. A 24-hour shut-off time clock is used; the operator can set the Fade-Ometer to automatically shut-off at any predetermined time, day or night; and the equipment compensates for power interruption or failure.

Practical Textile Research-- Some Evidences and Opportunities

By Gaston Gage

Clemson College Textile School

Editor's Note: Mr. Gage surprised many in his audience at Myrtle Beach who had expected an abstract, theoretical dissertation on research by presenting some concrete, practical and thoroughly interesting examples of what has been done and what may be done—in language readily understood by the operating mill man. Picking up his address at the point where he began reporting practical examples, we present the following abstract as being of definite interest and value to a large number of our readers:

IT HAS been thoroughly established that the maximum breaking strength of yarn, broken in a skein, can be obtained with a twist multiplier of approximately 4.30, varying slightly with the cotton used. Breaking the yarn in single strand, the maximum breaking strength is obtained with a twist multiplier of approximately 5.25.[1] Now, which one of the above two twist multipliers will give a maximum breaking strength in the cloth? I can not find where the test has ever been carried on into the cloth.

But there is some interesting data on breaking strength of different weaves.

Breaking Strengths of Different Weaves

The Bureau of Standards ran a series of tests to determine the effect of the weave on breaking strength and tear resistance. Forty-two different weaves were tested, all using the same yarn and cloth construction. The warp was 57s with a twist multiplier of 4.00 and the filling was 60s with a twist multiplier of 2.60. All the fabrics were 90x90. The weaves were plain, twills, sateens, baskets, mock lenos, etc.

The following results were found:

That the cloth with the most interlacing of its threads had the best breaking strength, especially in the filling. This was explained on the theory that the interlacing of the threads had the same effect in adding strength as adding more twist would have. It held fibers in close contact with each other. As the maximum breaking strength from twist had been more nearly approached in the warp than in the filling, the filling was assisted more by the interlacing.

Second, that the filling in the cloth broke better than the same number of strands of filling before it was woven. The same reason was given as in the first result; the interlacing took the place of the twist.

Third, that the warp in the cloth broke less than the same number of ends before weaving. This was explained by the fact that the warp undergoes a certain amount of strain and chafing in weaving which weakens it. Also, the warp was nearer its maximum strength from the twist that was put into it, so had less chance of being helped by the interlacing.

Fourth, the cloth which had the least interlacing had the highest tear resistance. This was explained by the fact that the cloth with the highest amount of inerlacing was firm so that when torn it did not "give", but every thread was torn before any strain came on the adjoining one. In the case of the lowest amount of interlacing, the cloth was flimsy and when it was torn, the interlacing shifted to put the strain on more than one thread at a time.

But where does this bring us? You noticed that the twist multiplier in both warp (4.00) and filling (2.60) was low. There was an opportunity for these low twists to be helped by the interlacing. If warp and filling both had had the necessary twist for maximum breaking strength, what would the results have been?

Take all this one step farther. W. E. Morton, College of Technology, Manchester, England, gives us the results of some of his research. He finds that the breaking strength of the warp increases with the addition of picks—which are interlacings—up to a certain point, and then begins to fall off. One of his illustrations follows:

20s warp, 20s filling, 56 ends per inch					
Picks per in. ------	0	40	56	70	76
Break, 2″ width ---	63	76	84	91	81

The maximum breaking strength was obtained with 70 picks. It gave 91 pounds break. With the addition of 6 more picks the breaking strength fell 10 pounds. Other numbers of yarn show the same tendency. So there seems to be a limit to the amount of interlacings that will help and after a certain point is reached it does harm.

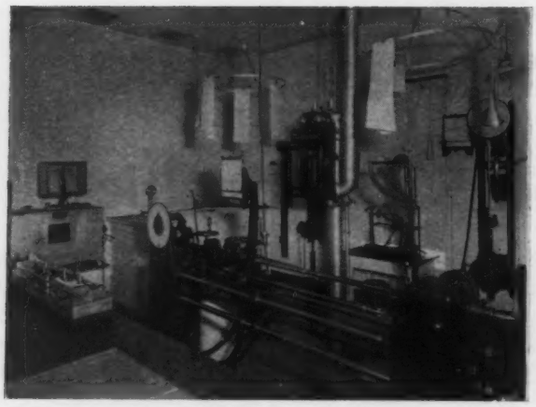
You may follow the thing on and on and on, and you never get to the end. There are a tremendous number of variables that enter into the manufacturing, all the way from the raw cotton to the tension of the warp on the loom.

United States Department of Agriculture Bulletin No. 1488 shows that there is a direct ratio between the grade of cotton used and the percentage of waste taken out. There is a general trend in that direction on breaking strength results, but not so pronounced.

The Bureau of Standards ran a test on single and double creel roving in spinning. By the skein break the double creel roving was found to break better for all numbers and twists. By the single strand break

Abstract of a paper presented by Mr. Gage at the Southern Textile Association convention, Myrtle Beach, S. C., June 15, 1935.

[1]When the twist multiplier, or turns per inch, reach the place where there is the minimum fiber slippage when the yarn breaks, the maximum strength has been reached. Any twist beyond this point sets up a torsional stress that weakens the yarn and the breaking strength starts to decrease.



Courtesy, West Point Mfg. Company

A corner of the testing laboratory located at the Shawmut (Ala.) Mills. The essential work done in such laboratories can be augmented by practical experimenting in the mills . .

the yarn from double creel roving broke better at the low and medium twists but showed no advantage over the single creel in the high twists.

Tests on Sliver Variation

Mr. Lee of the Clemson faculty was on leave from the college for two years as a fellow of the Textile Foundation. His work dealt chiefly with the irregularity of cotton yarn and its relative irregularity from the different processes in the carding and spinning. His findings, published in *"Textile Research"* are briefly the following:

Using a 6-inch length as a weighing unit:

Card sliver is very variable.

Through the first process of drawing the irregularity of the sliver decreases greatly.

Through the second process of drawing the irregularity remains unchanged to any significant extent.

Through the slubber the irregularity increases markedly.

Through the other roving frames no significant change is produced in the irregularity.

Through the spinning frame the irregularity increases appreciably.

No marked difference in long draft and short draft with their different doublings.

The order of their irregularity is spinning, slubber, intermediate, speeder, second drawing and first drawing.

All of the foregoing is from Mr. Lee's report. Why these things are true, what can be done about them and the effect they have on the yarn, is still on ahead. But it stands to reason that the more irregular the yarn is, the poorer it will run on spinning and weaving and the poorer the quality of goods that can be made from it.

Reversing the Drafting Order on Roving Frames

I was told by Mr. Coulson, of the Shirley Institute of England, that they had run experiments and had shown that it was possible to reverse the order of draft on the roving frames and not hurt the spinning qualities or breaking strength of the yarn. The usual order is approximately a draft of 4.5 on the slubber, 5.5 on the intermediate and 6.5 on the speeder. This can be changed to 6.5 on the slubber and 4.5 on the speeder with no appreciable effect on the yarn spun from the product. It might be possible to balance the machinery lay-out by shifting the different drafts on the roving frames.

There has always been an occasional demand for weaving wide fabrics on narrow looms. It has never been done successfully because of the rib which is found where the cloth is doubled at the temple. This is being worked on by Mr. McKenna of the Clemson faculty, and he believes he will have something to announce on it shortly.

Mr. Lee's seniors at Clemson did some interesting research in their theses this year.

What is the Best Twist Multiple for Strength?

In two problems they corroborated the fact that maximum breaking strength, with the skein break, is obtained with a twist multiplier of about 4.30.

Two boys ran some tests on the irregularity of first drawing sliver, compared to the card sliver it was run from, using three different roll settings. They used what was called a close setting or 3/16-inch, 3/8-inch and 1/2-inch over the staple length, a normal setting or 1/4-inch, 7/16-inch and 5/8-inch over staple length and a wide setting or 5/16-inch, 1/2-inch, 3/4-inch over staple length. They found that the wide settings showed the most improvement over the card sliver, as to irregularity, but the difference in improvement between the wide and normal setting was hardly significant.

Another pair of boys ran a similar test on irregularity due to tight, normal and loose tension on the drawing frame. They used a range of five tension gears and found a distinct difference in the regularity. It so happened that their middle gear gave the best results and the irregularity increased with each gear used in both directions.

Irregularity of Roving with Different Roll Settings

Still another pair of boys ran tests on irregularity of slubber roving with different roll settings. The settings used were close or 5/32-inch and 5/16-inch over staple, normal or 7/32-inch and 3/8-inch over staple, and wide or 9/32-inch and 1/2-inch over staple. The wide setting showed the least irregularity in roving.

All of these problems were based on ½-inch lengths that were weighed for irregularity. This information can not be accepted as final. Check tests should be run to corroborate them. What effect this difference in irregularity would have on the spinning and breaking strength could not be determined this year. We may get into that later.

How about that Licker-in Speed?

All of these illustrations I have given seem to stop short of anything definite. As I said, there are too many variables that enter into the manufacturing process at different mills. Your cotton is different, your opening and picking equipment is different, you

(Continued on page 49.)

If Industry Fails

A Special Contribution by
W. M. McLaurine

DURING the present stage of transformation from governmental control into efforts at true industrial self-government, this discussion by Mr. McLaurine is presented as representing his point of view and analysis of the situation. He is chairman of the conformance committee as recently established by the American Cotton Manufacturers Association, of which he is secretary-treasurer. In that position he has been in constant, intimate touch with the Washington scene as it developed during the formation and operation of NRA, and subsequently . . . . . .

INDUSTRY must not fail in its program of self-government. It has repeatedly announced its ability and willingness to guide itself to its own destiny. It has grown restive and restless under the restraints of Government, even though it admits that many of the government compulsions have been educative and beneficial to the industry. It also admits that many of the compulsions have not embodied any new theories, principles or philosophies of industrial progress. Practically every serious progressive measure in the cotton textile code was the crystallization of the ideals of the progressive leaders of the industry.

The leaders of the cotton textile industry have never condoned long hours, low wages and child labor. They have never incorporated any of these policies willingly in their program. They have been the victims of a system of competitive composition, in manufacturing and marketing, that was produced by an uncontrollable minority who selfishly have sought to advance their own welfare regardless of the influence on the group, or the social and economic results accruing therefrom. Each, therefore, has cleared his own conscience and classed himself as the victim and never as the executioner of or one responsible for the system.

Now that the industry has been under government control for nearly two years and these evils have been uniformly removed, it will be easy to see who the guilty parties are, if there are any. They will name themselves loudly and individually by breaking away from the pledge "to make no change in the conduct of the textile business" now that the National Industrial Recovery Act has been declared unconstitutional.

The leaders and hundreds of other manufacturers have said that industry has advanced and must not recede. They have said they are intelligent and capable of self-government. The public is watching the bold and possible manifestation of proof.

Who will dare break down progress and return to the jungle and lead the industry there with it? Who will be so shortsighted and selfish as to expose himself and his organization to the indignant criticism of an aroused socially progressive public conscience?

If industry fails, it will be a calamity. Law will be written to govern it in its impotency. The Constitution was made for man's benefit and not intended as a barrier to human happiness and progress. It has been amended. It can be amended. The social and economic mind which wrote the commerce clause and other clauses was the product of conditions 150 years ago.

It is a human document written by human beings and, as some say, divinely inspired. But as long as the word human is used there is deeply signified a limitation of inspiration and susceptibility to error, if not of commission then of omission.

Life in all of its manifestation is evolutionary and changing, hence the inevitable incapacity of humanity to write a changeless document that can be a basis for a changing world.

If society were perfect, if society were ideal there would be no need for law and government. There would be no need for a constitution or a magna charter of legal permissions for the control of society.

Since society is not perfect, there are needs for these artificial barriers and limitations to mandates of law and government, and since society has a tendency to operate selfishly and at times oppressively, and since the whole social and economic philosophy of life has broadened and become intricately complex in its operations, it may be—it is entirely possible—that the constitutional mandates of mankind do need amending.

Harold G. Moulton in a discussion of social controls several years ago, said that man's acts are governed in a large measure (a) by the realm of positive law; (b) by dutiful obligations cooperatively and willingly performed in the interest and progress of society; (c) by the realm of personal rights indigenously and specifically inherent in mankind.

"The Realm of Dutiful Obedience"

To try to orientate these three classes of duties or rules of conduct would be a long story and yet they would have a bearing upon the national philosophy of America as it tries in these troublesome days to interpret and segregate rights into their proper classification. Individual or personal rights are those which may be described under the constitution as inalienable rights—life, liberty and the pursuit of happiness. And yet the perversion of mankind has made it necessary to write volumes of interpretations on these qualifications, and in many instances, enter the field of positive law to delineate and clarify what our constitutionalists meant in their pronouncement, and later these words have needed further orientation because evolution and science and speed and congestion and greed and dozens of other factors have entered or modified mental concepts until the realm of personal rights can

never be a clearly defined area, except in certain generalities, to which certain specific explanations and limitations will always have to be made.

The realm of dutiful obedience or dutiful obligations to society is that realm in which mankind shows itself most able to progress *ipso facto* and capable of self-government. It is the realm in which industry now finds itself and it is the one place in which mankind has the greatest opportunity for self-expression, provided, it acts in accordance with the code of ethics that pertains to the greatest good in the realm. It is the realm of dutiful obedience to society and these words are broad and socially inclusive in their connotations.

If the realm of human rights can be properly found and observed, if the realm of dutiful obedience to society can be properly outlined and operated, there will be but little demand, if any, for a realm of positive law.

In the great onrush of economic life prior to the depression, the ethics of personal rights and the ethics of dutiful obedience to society became clouded and contaminated, hence it was necessary for the realm of positive law to extend its domain and forbid certain practices and inaugurate others which would tend to social stability and social security.

A Change in the Social Consciousness of the Mass

The extension of the realm was declared unconstitutional insofar as the application of the National Industrial Recovery Act extended, and again the textile industry is operating in the field of "dutiful obedience to society." If after the lift and correction by the temporary rule of positive law it shows that it has learned its lesson and can conduct its operations in keeping with the demands of the ethical code of the realm, there will be no further demand from the public that the "realm of positive law" shall be extended.

If economic chaos results from unethical conduct and industry proves its inability to govern itself, then the public will unhesitatingly and enthusiastically demand that the unethical conduct shall be forbidden and if it is necessary for a constitutional amendment to be written to make this possible, it will be written and adopted and become a part of the corporate constitution.

Economic distress is powerful and elicits sympathy, emotion and action. The mind of America has suddenly become socially conscious. Good roads, telephone, telegraph, radio and other devices have pitched all of America into a town meeting—speed has annihilated space and the newly awakened social mind revels in its power and prestige.

The mass voters are demanding greater social security. They feel that it is slipping away from them to an "irresponsible power" over which they have no control and can have no control under present conditions, hence they are willing to entrust the governing of their economic security to a politieal power, the government, whom they feel they can politically control by right of suffrage.

There is but one way to avert this movement and that is for business and industry to find out what the code of ethics of dutiful obedience to society is and to obey it.

There is an unfair implication in the discussion thus far. It might be implied that industry and business are the only groups in society that are guilty of unethical conduct. It is quite likely that all or at least a major part of all groups are guilty of unethical conduct. Mankind has a commonality of the baser elements in all classes. It may be entirely possible that some group or groups outside of business and industry have adopted codes of conduct that have compelled industry and business to do as they have as a matter of self-preservation and self-perpetuation. If this is true then all groups of society need to study diligently and intelligently the code of ethics that is most progressive and beneficent in the realm of dutiful obedience to society.

When Emerson said, "I am the center of the universe", people thought he was an egoist and an extremist. That statement is not difficult to comprehend today. Every business and every person has ramifications that influence every other business or person in the nation. Society is an interwoven, tangled web of struggling strands trying to straighten itself out in the warp and woof of life. There are no separate entities.

The Dangers of More Centralized Control

The extension of law carries with it always a narrowing of the free acts of mankind. Every law is a circumscription of society. If society complains of its restrictions and constrictions, it has no one to censure but itself. It fails to make its changes and adaptations in conformance with the highest ethical ideals of the group; after it has been given sufficient time and it shows itself belligerent and unwilling to follow the precepts of public opinion, then public opinion coerces.

Economic conditions are now much improved over two years ago. There is greater confidence, more employment and other factors that give to society a feeling of security. The responsibility for self-government has caused many industries and businesses to go on record as favoring a continuance of present conditions. Therefore, the declaration of the unconstitutionality of the National Industrial Recovery Act has not brought with it any disastrous effects.

The situation is made more dangerous by the temporary success. There are those who will consider the lack of instability in industrial conditions, since the Act has been declared unconstitutional, not due to the fact that business has been held *in statu quo*, and hence proceeds as if in reality operating under the act, but in no way dependent on the provisions of the act, hence the code principles can be disregarded.

This will be a sad day. It will be what biologists call a "reversion to type". It will mean a destruction of confidence, a destruction of markets, a destruction of industrial co-operation, a destruction of industrial relations, cut-throat competition, survival of the fittest, a determination on the part of public sentiment to so revise the constitution that regulation and control of industry in far more ways than the National Industrial Recovery Act can be effected.

It will mean that industry will be compelled to do

the things that it ought to do and receive no credit for it. It will restrict individual initiative and place industry into a regimentation that it has never dreamed of.

If industry fails, it will not only lose its economic status, it will lose its social status. Society will write what it can do and what it cannot do. "The pack is stronger than the wolf", as Kipling said, and that aphorism is self-evident.

Industry must make its code of self-government in keeping with public demands and public expectations, or legal enactments will deprive it of its right to make its own code and will then write a code for it.

The present day tendency in government is toward strong centralized authority. It is much stronger than the average business man thinks. Business can hasten the tendency or retard it. It alone can make the decision.

Chas. E. Merriam has said that we can blow out the light and fight it out in the dark, for when the voice of reason is silenced the rattle of machine guns begins.

Textile Developments in June in Post-NRA Adjustments . .

ANOTHER June brought another eventful, active period for the textile industries. Just two years ago last month cotton-textiles were conspicuous as the promulgators and adopters of Code No. 1 under NRA, and other branches swiftly followed suit. June of this year found these industries busy adjusting themselves to the new conditions created by the abolishment of NRA following the Supreme Court decision on May 27. The month was filled with meetings, conferences, decisions and announcements bearing upon efforts to retain the salutary features of the code structures and plans for creating means of conformance to these features by the entire industry. Again the experience of cotton-textiles was duplicated by the other textile branches.

For the purpose of the record, though the details are generally familiar, the first action in this branch was the adoption, by the Cotton Textile Industry Committee, the executive committee of the Cotton-Textile Institute, and representatives of all branches operating under the Cotton-Textile Code, of this resolution, on May 29:

Resolved, that the Cotton Textile Industry Committee, the Executive Committee of The Cotton-Textile Institute and members of affiliated branches of the Cotton Textile Industry here assembled, do confidently recommend that the cotton textile industry make no changes in the conduct of its business during the interim caused by the Supreme Court decision, and urge the industry to accept this as its general policy; and

Resolved further, that we respectfully recommend that President Roosevelt exercise the prestige of his great office in a direct appeal to all industries to pursue a like policy.

On June 7 at Charlotte, N. C., 300 southern manufacturers at a special meeting of the American Cotton Manufacturers Association unanimously adopted the following resolution:

Resolved that the members of the American Cotton Manufacturers Association assembled in Charlotte, N. C., on Friday, June 7, 1935, confidently recommend to all southern textile manufacturers that no changes be made in the conduct of the cotton textile business;

Resolved further, that the president of the American Cotton Manufacturers Association is authorized and directed to appoint a committee for observing and securing conformance by the members of the industry with this resolution.

On June 10, the National Association of Cotton Manufacturers in Boston passed a similar resolution applying to the New England mills. Subsequently, Thomas H. Webb, of Concord, N. C., president of the American association, announced the personnel of the southern conformance committee as follows:

W. M. McLaurine, Charlotte, N. C., chairman; Hunter Marshall, Jr., Charlotte, N. C.; Wm. P. Jacobs, Clinton, S. C.; T. M. Forbes, Atlanta, Ga.; Scott Roberts, Anniston, Ala.; A. L. Emery, agent, Brookside Mills, Knoxville, Tenn.; Philip S. Tuley, president, Louisville Textiles, Inc., Louisville, Ky.; J. H. Ledyard, secretary-treasurer, Tupelo Cotton Mills, Tupelo, Miss.; W. B. Munson, Jr., president, Texas Cotton Manufacturers Association, Denison, Texas.

Ernest N. Hood, president, National Association of Cotton Manufacturers, named on the northern committee on observance the following:

Lincoln Baylies, Nashua Mfg. Co., Nashua, N. H., chairman; Albert H. Crossman, Utica & Mohawk Cotton Mills, Utica, N. Y.; Robert L. Anthony, president, R. I. Textile Association, Providence, R. I.; C. F. Broughton, treasurer, Wamsutta Mills, New Bedford, Mass.; and Frank P. Coolidge, treasurer, Du-fee Mills, Fall River, Mass.

There has been to this writing practically unanimous voluntary conformance to the fundamental code principles subsequent to the Supreme Court decision. Boger & Crawford, who announced a longer week with hourly rates retained, returned to the code's maximum hours for operatives after one week. Chicopee Mfg. Corp., instituted a third machinery shift at its cotton mill in Georgia, retaining minimum wages and maximum hours for operatives. Some of the plants owned by tire companies took similar action. There were a few, isolated instances, among small mills, of changes from the code schedules—but substantially, up through June, the lines formed by the industry's organizations, held firm, through voluntary action.

The procedure of the conformance and observance committees were not outlined in detail. The letter of President Webb of the American Association, as read at Myrtle Beach and reproduced on page 55 of this issue, is enlightening; as is the article by Chairman McLaurine on page 45.

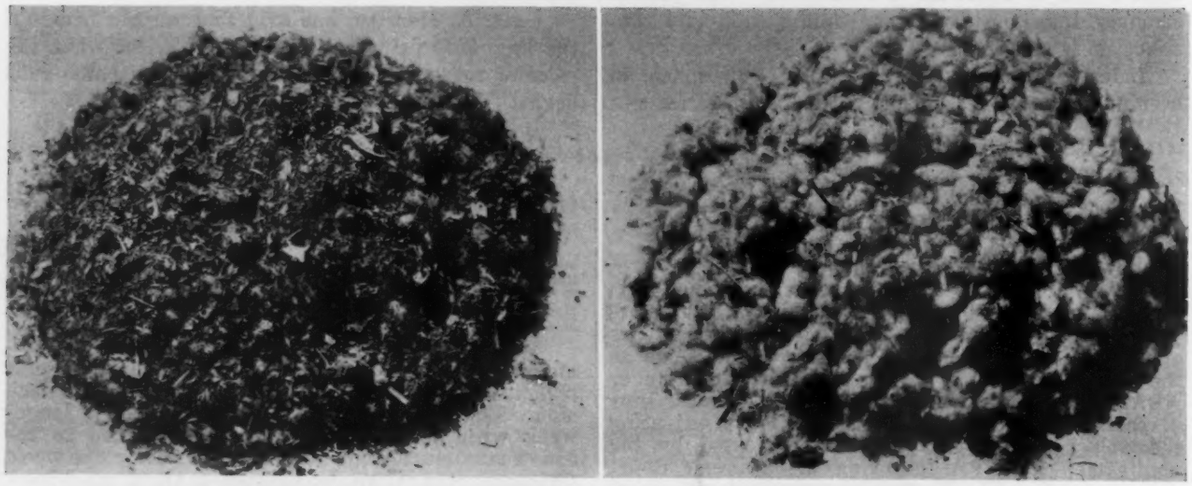
While this development was outstanding during the month, it by no means covered all of the problems of the industry nor developments in connection with it. The final passage by Congress of the vicious Wagner Labor Disputes Bill, the latter part of June, implied more serious complications for industrial relations than old Section 7-A could ever have produced; the social security plan also passed holds the threat of oppressive and destructive taxation.

A number of northern and southern mills took legal action in relation to payment of processing taxes under the AAA. Some mills made current payments under protest; others filed claims for taxes already paid; others filed suit in Federal courts to recover taxes already paid; and others attempted to secure further extensions of time on unpaid taxes.

On May 17, an Act of Congress was passed providing for an extension of 90 days additional time to be allowed for paying processing taxes on cotton, this being subsequently explained officially to mean that the extension becomes effective with the tax for the month of April, 1935; that is, that the tax for that month is now payable on or before August 29, 1935, and for each subsequent month will be payable on or before the expiration of ninety days after the time fixed for filing the return. Another example: the returns covering cotton consumed during the month of June must be filed not later than July 31, and payment of the tax on this cotton must be paid not later than October 29.

Many mills, North and South, announced in June plans for complete shut-downs during the first week in July in connection with the Fourth of July holiday period.

A Report of a Test Made to Determine the Actual Waste and Foreign Matter in Cotton



Above, photographs of samples of waste. Left, 88 pounds of sand and leaf; and right, 16 pounds of broken seed, leaf and bulky waste were taken out as described . . . . . .

By "Kaycee"

THE readers of COTTON will, I believe, be interested in the actual results of a test which we conducted in March 1935 to determine the waste and foreign matter in cotton. The test was made on 16 bales of North Georgia Middling 15/16-inch staple cotton. We wanted to see how much waste each of our cleaning machines was taking out of the cotton, and then to see how much of this waste was cotton fiber and how much was foreign matter.

All machines were cleaned out prior to starting the test, and an accurate weight record was kept of all waste. These test bales were run through the following machines in the order named: On a feed apron to a hopper opener, Buckley upstroke beater, one vertical opener (all of which are in the opening room). Then sucked through a pipe to the picker room, there through a Murray cleaner, then to a rake type distributor which delivers to the picker hoppers. The breaker picker has a porcupine beater, the intermediate and finisher pickers have the Kirschner type beaters. (These are connected and made into a one-process picker.)

The actual weights of the laps were recorded and they were then taken to the cards. All the waste weights were kept here, and the cans of roving actually weighed. The waste from the machines is as shown in Table I.

The 516¾ pounds of waste was run through a willowing machine three times, and all the heavy waste was dropped beneath the machine. These droppings were then rubbed over a ¼-inch mesh wire sand screen and the sand, leaf and broken seed was taken out under the screen. The waste that was left on top of the screen was then re-run through the willow machine again and the droppings were again

TABLE I

16 Bales of Middling 15/16-Inch Cotton

Weight just before opening	7,899	lbs
Weight of bagging and ties	351	lbs
Weight of cotton started through mill	7,548	lbs
Buckley beater waste	60½	lbs
Crighton (vertical) waste	19	lbs
Murray cleaner waste	28	lbs
Breaker waste	14½	lbs
Intermediate waste	15½	lbs
Finisher waste	19	lbs
Dust house	1¼	lbs
Dust pit	18	lbs
Opening room sweeps	12	lbs
Picker room sweeps	6	lbs
Total	203¾	lbs
Net weight of all laps	7,239	lbs
Loss in weight cotton fed	309	lbs
Total weighed waste	203¾	lbs
This leaves an invisible loss of which is not accounted for except probable loss in moisture content and dust which was carried off by the air.	105¼	lbs
Lap waste on cards	4	lbs
Front waste on cards	31	lbs
Card strips	139	lbs
Vacuum tank strips	61	lbs
Dust from vacuum tank filter bag	2½	lbs
Card fly and motes	64	lbs
Clearer waste	2	lbs
Card sweeps	9½	lbs
Total	313	lbs
Net weight of card sliver	6,949	lbs
This leaves an invisible loss of	77	lbs
From the total net cotton fed to mill and net cotton gotten from cards, we get:		
Total loss of	699	lbs
Actual weighed waste from this	516¾	lbs
Which leaves as invisible waste	182¼	lbs

rubbed over the wire screen and as much of the foreign matter as possible taken out.

Then all of the droppings from the screen were taken and re-screened to separate the sand and leaf from the seed and motes. By weighing these, we find there are 88 pounds of sand and leaf. There are 16 pounds of broken seed, leaf and bulky waste which might be classed as foreign matter in the cotton. By this test we find that out of the 16 bales of cotton there was 88 pounds of absolute foreign matter, and 16 pounds that might come under this head. Samples of these two grades of waste are shown herewith to indicate the condition of them.

A summary of the waste made in percentages is as follows: Bagging and ties, 4.44 per cent. Total waste from net cotton through picker room, 4.09 per cent. Total waste from laps through the cards (based on the net cotton fed), 5.17 per cent. Total waste from net cotton fed through the cards, 9.26 per cent. Adding bagging and ties makes 13.70 per cent waste. The total invisible waste was 2.41 per cent, which is high, doubtless due to humidity conditions at the time the test was made.

The total waste percentage may seem high, but it must be borne in mind that the weight of the laps and card sliver was taken as they came from the machines, before the cotton had time to regain any of the moisture lost due to machinery heat.

In closing, I will state that the moisture in the bale of cotton just before feeding was 8.15 per cent. The moisture in the finished lap was 7.33 per cent, and in the card sliver, 6.50 per cent. This was not an average, but was one test taken at each of these places. The wet and dry bulb average temperature in the card room while this test was being made was 68 degrees wet and 78 degrees dry. There was no record made as to the humidity in the opening and picking rooms.

Practical Textile Research

By Gaston Gage

(Continued from page 44.)

have to put too much through your cards, you can't get the same tension on all your drawing frame ends, your machinery is different, and so on to the end. So what can you do?

My idea is to take the main principles and work them out—by research—to fit your individual conditions. The things you have to work with are settings, speeds, drafts, doublings, twists and processes. It is not possible that the arrangement of these things that would give one plant the best results could give all plants the same results. I can't believe that a licker-in speed of 450 r.p.m. is the best speed under all conditions. I believe that the length and grade of cotton and the opening equipment would have some bearing no what would be the best licker-in speed to run. There is obliged to be a different top efficiency speed for drawing frames under different conditions. Is doubling six and drafting six always best on the drawing? It might not be.

Who can find out what arrangement of these variable items will give you the best results?

The man off somewhere can find out some general principles and you will have to vary them to fit your case.

Research Needed on Labor Load

This fitting can be done only by research. And research takes time and you have no time. You are busy all day as it is. Research takes thought and study. You will have to find some time and thought and study for research or stay in the groove you are now in. The things that research should do for you are, give you better production, lower labor cost, lower supply cost and better quality.

There is one other place for research that I think is very important. That is the question of labor load. The Blue Eagle has passed on but the labor complications that flew in the door with him did not follow him out. There are obliged to be some changes taking place. There is going to be all kinds of propaganda cut loose. There will in all probability be more federal investigations into the labor questions. There will be other arbitration boards and new cases brought before them. What has this got to do with research, you will ask. Do some research into your labor load, from picker room to cloth room. Check every job in the mill. Find out exactly what every man is doing. Find how many looms per hour your weavers are starting up, find out exactly how many bobbins your different battery fillers are handling in a day. Check up on your doffers and see exactly how many bobbins each doffer is doffing in a day. Check the number of ends your spinners are putting up in a day and the number of bobbins they are creeling. See how many bobbins of roving your roving haulers are laying up. Find out the number of bobbins your frame hands are doffing and the number they are creeling in a day. Get all of this information accurately. Have it on hand. You will no doubt find some weavers with a higher loom stoppage than others. You will find some spinners with more ends down than others. Use a little research and find the cause of this and correct it. Find some way to get all the loom stoppage and end down figures lower. Know what every man in the mill has to do in a day. Check these findings against each other. Look for discrepancies. If you find a doffer or battery filler, or any one else, whose work is out of proportion, correct the fault yourself. In other words, have your house in order.

Editor's Note.—Perhaps the reader may be interested in making, in his own mill, some tests along the lines of the reports made in the foregoing discussion by Mr. Gage. We feel sure that The Arkwrights, Inc., the research organization of the Southern Textile Association, will be glad to consider any proposals by mill men along this line looking to the conduct of such tests in connection with application for membership in that body.

When Is a Penetrant Not a Penetrant?

By Harold Schroeder

ALMOST everybody now-a-days seems to be writing articles on the subject of penetrants. This seems to be a popular subject, always full of news interest and, most appropriately, never seems to be fully exhausted. And I note with pleasure that these articles to which I refer seem to be departing from the usual cook book recipe type of textile articles and are dragging in structural formulae and some complicated and amazing mathematical formulae. Now, I have no objection to mathematics. Any husband who has a joint checking account with his wife simply has to be well up on the simpler aspects of the binomial theorem, particularly when she has the cheery habit of carrying one check book in her purse, with another one in her desk at home, and dropping in at the bank to make use of the handy pink slips there.

I do, though, regret the modern distressing tendency to grow mathematical about things happening in a dyebath. Mathematics never got very far without introducing at least one unknown factor, and some of the most brilliant mathematical deductions have been arrived at following the subtraction or division or something of one unknown factor by another. That really does sound something like dyeing, though. But mathematics, if the various operations are carried out correctly, always produces the same results, while conscientious dyers know from sad experience that different dyebaths, even though apparently made up identically, do not always produce the same results.

It might be well at this point to mention what a conscientious dyer is. He is a dyer who is as interested in solving his own problems as he is in hearing about those of somebody else.

As I say, no matter how many times we may have run some particular formula, something different may happen next time, which I suppose is part of the fascination in being a dyer and keeps us messing around our dye pots when we might be out in the wide, wide world not doing half so well at something else. I do not think that the great majority of dyers are content to accept the unknown factors in dyebaths as being always with us and I am sure that each one of us wishes eventually to hand on the torch in time to come with a few of these unknown factors cleaned up.

Penetrants come in bags, in bottles and in barrels, and what it must cost their makers for sample bottles I would not like to have to pay. Testing these samples also costs the mills quite a little, yet a dyer or chemist, if there are any such, who does not test everything new that comes out, some day is going to wish he had. These penetrants are sold as specialties, which means that their maker has invested money in research to produce a product which will solve one particular problem or group of problems when used intelligently in the right place at the right time.

There are so many of these products, so different in their compounding, that it is confusing to a dyer or chemist to decide which is suitable and which is not suitable, but no matter from what they are made, their ultimate purpose is the same. Each and all are intended to assist a dyer in the work of making better goods.

Dyers are of course accustomed to accepting without comment the presence in the art of thousands of different dyestuffs, realizing that each dyestuff will produce a different shade or a separate degree of fastness, but when we take up the subject of penetrants, it will be noticed that the many hundreds of penetrants offered for use exist solely for the one object of wetting out the goods or causing the dye to penetrate evenly all through the goods. Such a condition argues for the existence of some state of confusion and uncertainty among those who make and those who use these many excellent products.

An Exploded "Theory"

I do not believe that there will be any objection raised to the out-and-out statement that without exception there cannot be found one so-called penetrant on the market today that will penetrate goods and cause dye to follow it evenly unless there is also mechanical motion assisting it. And when, like chemical bloodhounds, we follow this reasoning out logically, we realize that in the case of cotton, wetting out and leveling can, so far as theory is concerned, be carried out solely with water and mechanical action.

The practical catch in this delightful burst of theory is that such a combination of water and mechanical action for dyeing would undoubtedly take too long a time to complete a dyeing and most likely would destroy or seriously damage the goods being dyed by such a process. So we can agree that the use of penetrants or specialties is entirely justified on two very important grounds; first, time, and, second, the preservation of quality in the goods.

And now having argued ourselves into proving theoretically what every dyer knew all along—that specialties and penetrants are economically a justified necessity—we may push along a little and see if we can decide just when and where they should be applied.

Analysis of specialties and penetrants shows a varying difference of opinion as to what should be used, and it is entirely possible that a man not entirely familiar with the various problems facing different dyehouses should reach a conclusion that these various penetrants are just so many nostrums to be put in the patent medicine class and stamped as so much quackery.

Now, this is not so. Too many reputable con-

cerns are today producing specialties for penetration, which specialties are in turn resulting in the production of too large a poundage of quality merchandise for such specialties to be condemned out of hand as useless expense. A dyer of experience knows different.

The reason for the many specialties available for the one purpose of assisting the mechanical action of wetting out is, of course, that no two dyehouses have the same problems or the same difficulties, even if they are working on the same line of goods, and it takes a dyer of skill and perseverance to decide by experiment just what particular type of specialty will best assist him in his work.

Let it be said at the start that no dyer of repute would use any specialty when by substituting a single straight chemical he could get the same results. In fact, I think a canvass of the situation would show that the better the dyer the more specialties will be found in his regular work. He may, indeed, make them up himself in a barrel, but any mixture of two or more chemicals or oils blended together for a particular purpose is a specialty, no matter how or where it is made.

First, the Single Chemicals

Let us for a moment discuss single chemicals and see just how far we can get with each one of them. For a start, we will mention tri-sodium-phosphate and soap in connection with cotton. Used alone, each of them will wet cotton out. Tri-sodium-phosphate will remove impurities from the cotton, but after it has removed a certain amount the tri-sodium-phosphate begins to wonder what it is going to do with them now that it has them in suspension. An increase in the percentage of tri-sodium-phosphate will take care of this situation, but the extra percentage of alkali may not be so good for the resulting finish. Now consider soap; it undoubtedly will wet out cotton but it doesn't do such a particularly good job. There is a tendency for the goods to float, quite soon the lather breaks down and we have to add more soap, especially if the water is hard.

Now consider a mixture of soap and tri-sodium-phosphate and, my masters, what a happy result we get. The tri-sodium-phosphate removes the impurities which the soap promptly emulsifies. There is real team work for you, producing better results together than if greater amounts of either were used separately—this is a specialty. I will concede that this example is a very simple specialty but it is the basic argument for the economical justification of specialties.

We will go just a little further and postulate a case where the waxes must be removed from the cotton, the next step beyond just mere wetting out. Again, for purposes of illustration, we use our mixture of soap and tri-sodium-phosphate, but this time we go up on the temperature. Without doubt, our waxes begin to come off of the cotton, but neither the soap nor the phosphate is capable of keeping them in solution, so the next step is to add a solvent for fats and waxes capable of preventing them from being deposited all over the goods.

These three products, alkali, emulsifying agent and organic solvent, form the basis of all kier boiling and package wetting out specialties, and it is the skill in their selection, compounding and manufacture which entitles them to a definite and valuable place in dyehouses.

The Specially Prepared Penetrants

Now we come to an entirely different class of specialties, which are more precisely penetrants, that is to say, they endeavor to introduce water into the cotton fiber with a minimum of dissolving action on the chemical components of the cotton fiber and of necessity they operate at lower temperatures, but they of course still need the mechanical motion for them to work efficiently. I feel sure that every dyer has had occasions when he would have been very glad if some chemical were at hand which would wet out without also removing too much of the pectins, etc.

These products are a triumph of applied chemistry and are usually definite chemical substances. I have in times past taken a few furtive looks at the structural formulae of these penetrants, but like Omar of old, evermore came out by the same door wherein I went. But it seems that if you can persuade about 24 carbon atoms to join hands in a single row that you get something that looks like a centipede. The legs of this chemical centipede possess the remarkable property of being soluble both in water and in oil. High is the basis of their powers of so-called penetration. You will see that such products, which have really no reaction with or no the chemical components of the cotton fiber, are particularly dependent on mechanical action for their contact with the dry cotton fiber, but once brought in contact, the centipedic legs bring about a union between the oil in the fiber and the water in the bath, which is wetting out in its most limited sense.

The skill of the dyer may be said to be demonstrated, not by avoiding the use of all specialties, but by reaching a correct decision as to when they should be used and which should be used. We will admit that the use of the centipedic type at the boil might be commercially unjustified when soft water was being used and, conversely, the use of the alkali-emulsifier-solvent type might not be the best at low temperatures, but again these decisions are not necessarily dogmatic since the particular condition of the goods must be taken into consideration, as also must be the time element. Nor is it necessary for all types of dyeing that each step be carried out to its utmost point. For example, the complete removal of the waxes is only necessary for certain bleaching purposes, so far as the preparation for dyeing is concerned little or none of the waxes need to be taken away, especially if dark shades are to be dyed. The question of levelness also enters into the picture, and so the choice of the correct penetrant or wetting out agent depends on many factors, not to mention the mechanical efficiency of the dyehouse equipment.

It is agreed that there are conceivably some examples of poor penetration that no penetrant or spe-

(Continued on page 77.)

Carding, Spinning and Weaving Are Discussed at Gibsonville

THE summer meeting of the Northern North Carolina-Virginia Division of the Southern Textile Association was held at Gibsonville, N. C., on Saturday, June 8, for the discussion of practical problems covering all of the manufacturing departments of the mill. In the absence of James A. Bangle, chairman, the meeting was in charge of L. J. Rushworth, superintendent of the Riverside division of Riverside and Dan River Cotton Mills, Danville, Va., who is vice-chairman. W. J. Jennings, superintendent of carding and spinning at the Minneola Manufacturing Co., at Gibsonville, was in charge of local arrangements and conducted part of the discussion.

After the preliminaries in opening the meeting, there were short talks by David Clark of Charlotte and Marion W. Heiss of Greensboro, who were followed by Culver Batson of Lynchburg, Va., president of the Southern Textile Association, who made an interesting talk comparing the avocation of fishing with the vocation of running a mill, pointing out that the same requirements of good equipment, good bait, patience, skill, etc., that contribute to a successful fishing expedition also applied to the successful operation of a mill.

More Fly on Long Draft Spinning

Following Mr. Batson's talk, the meeting entered into practical discussion of carding and spinning subjects, led by Mr. Jennings. The first question was, "Do you have more fly with long draft than with short draft?" S. T. Anderson, assistant superintendent Carolina Cotton and Woolen Mills Company, Spray, N. C., was called upon, and said, "We do have more fly around the long draft—it is more difficult to keep clean than the old system of drafting. We attribute that to the fact that on the old system we had one more process, fine frames, in the card room, and now we get a lot of fly in the spinning room that used to come out on the roving frames."

Mr. Jennings pointed out that this is indeed a problem in a colored goods mill because the fly is no respecter of colors and the different colors of fly will mix and mingle together. He pointed out that in addition to having 40 colors running at a time, he is also spinning on large packages—that some of his filling runs for 37 hours—and that this is an especial problem under these conditions.

Mr. Simpson of Swepsonville declared that, "the best thing I have found to hold down the fly is to use oil on the cotton." He also said that the use of boards or partitions between the different colors will help to keep the fly from mixing with other colors.

It was asked whether there is more total fly with long draft spinning, and Mr. Anderson expressed the opinion that there is no more total fly but that the distribution is different, that is, there is more in the spinning and less in the card room. In further explanation of the condition, he pointed out that "it is reasonable to assume that since on the fly frame you have more twist than you do on the intermediate roving, when the intermediate roving is used on the spinning frames it is natural that more fly will come out there."

Mr. Jennings next asked, "How often should rollers be taken out and cleaned on 16s and 26s? Should the rolls on both these numbers run for the same length of time?"

S. T. Anderson replied that he has had long draft in for about two years (Whitin-Casablancas system) and that he finds that the new type of knurled middle roll with the later type of under-clearer does not need cleaning as often as the fluted type of roll. The new under-clearer, he said, will not let the lint come up through onto the apron as much as the older type of steel roll. My opinion is that the rolls should be cleaned at least every six months, and the top rolls possibly every three months. We tried to take out our middle rolls and clean them with gasoline every six months." Mr. Rushworth pointed out that of course, the coarser the numbers, the more often the rolls must be cleaned.

W. J. JENNINGS, of the Minneola Mfg. Co., who led the carding-spinning discussion at the recent Gibsonville meeting . . . . . .

Mr. Jennings pointed out that they run 80 hours a week, and that there is a considerable difference in the amount of cotton passing through the rolls in a week on the warp and on the filling so that this makes a difference as to the amount of cleaning to be done.

Cork Rolls on Spinning

The subject of cork rolls on spinning was next brought up. A representative from the Highland Cotton Mills stated that they had had cork rolls for about a year, and that they "do not get good results on 40s and 36s, but I think you would get good results on coarser numbers."

Mr. Anderson reported that, "some of our cork rolls have run a year night and day and we have had to rebuff some of them. Some of them have had a lot of lap-ups and had to be rebuffed. We are running 14½s and 15s on these rolls, and get along very well."

Reported by Robert W. Philip.

There are two or three things that enter into the life of a cork roll, Mr. Jennings pointed out, mentioning temperature, humidity, and the preparation of the stock. He said that when the rolls get too cold anything that bears down on the face of the roll will hurt them. Mr. Simpson said that out of a short experience he had found that the cork rolls will work all right on the back roll, but not on the higher speeded front roll. A representative of the spinning department of Revolution Cotton Mills said they had one side equipped with cork rolls that had been running for 12 months, and in answer to a question said they had not changed any weights—that they do not have any trouble at all with lap-ups on the cork, and get no cockled yarn. Mr. Jennings pointed out that moving the stirrup in the Speakman screw that this gives more weight than before in going onto long draft spinning.

W. J. Jennings stated that they installed long draft and cork rolls at one lick. S. T. Anderson reported having one mill on cork and one on calf skin, declaring that, "we would not have been able to make a go of it with sheepskin on the long draft. We would not say that the work is better on the cork rolls but the cork rolls are more economical."

As to the benefit of long draft, Mr. Jennings stated that an elongation test of his yarn, 26s made from 15/16-inch Middling cotton with a twist multiple of 4.56, showed somewhat better elongating qualities from the long draft than from regular draft.

Belt Dressing on Loom Belts

The weaving discussion was conducted by L. J. Rushworth. The first question was, "Do you use any dressing on leather belts on narrow looms; if so, what results are you getting?"

Mr. Bradford of the Martinsville (Va.) Cotton Mills reported the use of belt dressing, stating that before they started this, their belts had a tendency to be hard and brittle and that now they are more pliable, and that the looms are giving a more uniform pick. L. V. Andrews, superintendent at Martinsville, reported that they tried several makes before getting what they wanted; that they apply it sparingly to the face of the belt about once a week.

"I do not think much of it," said J. R. Copeland when asked his opinion as to the general practice of using belt dressing, adding that if belt dressing is used he had found it best to use a homemade preparation made of castor and neatsfoot oils. "My experience has been when you use belt dressing that it should be used sparingly, put on with about a one-inch painter's brush that you rub against the can and then touch the belt lightly while the belt is making one revolution. You should not put on too much, but you should get on enough to prevent the belt from jerking. It should be applied on the face of the belt about once a week."

L. J. Rushworth stated that his looms are motor-driven but that formerly they used a belt dressing about once a month, which was used for giving the belt pliability and life. A brush was dipped into neatsfoot oil and just touched to the face of the belt.

"What would you consider a maximum speed on slashers on a 3,000-end set, sizing 15 per cent?" was the next question. D. F. Short, overseer of weaving, Consolidated Textile Corporation, Lynchburg, Va., stated that he runs 36 yards a minute on 20s to 30s warp for print-cloth and sheeting.

"On sheetings, in that range of ends, my experience has been that around 35 to 40 yards a minute is best," said Mr. Rushworth. "I do not like to run a slasher above that speed with that number of ends on 22s—but we are not putting in 15 per cent size as stipulated in the question." With around 8 per cent size he stated that between 35 and 40 yards is a good speed.

Slasher Speeds

R. J. Craven of Spray reported that, "our ends are around 1,600 ends of 26s and our top speed is 40 yards a minute. It depends on the number of the yarn, the number of ends, and the percentage of size as to what speed a slasher should run." Mr. Bradford reported that, "we run 2,600 ends and our maximum speed is 44 yards." He pointed out that if too high a speed is run, it is necessary to run excessive speed in the cylinders to dry the yarn and that will bake the size on the yarn. He said they try to run around 7 or 8 per cent moisture.

Culver Batson here raised the point as to whether it is possible that most mills are drying their yarns too much on the slasher, pointing out that after being careful to get it very dry on the slasher, humidifiers are used in the weave room to put moisture in.

R. J. Atkins reported that they run from 3,000 to 4,400 ends of 19s at speeds of from 30 to 40 yards a minute. He asked, do you run the same temperature on the cylinders using potato starch as with corn starch. He reported he had difficulty with the potato starch, with the yarn sticking to the cylinders, particularly the large cylinder.

"We do not make any difference in the temperature on the cylinders on corn or potato—or tapioca," said Mr. Rushworth, "but so far as the yarn sticking to the cylinders is concerned, with a good clean cylinder and properly cooked size I do not think you will have much trouble along that line."

D. F. Short expressed the opinion that it is necessary to cook potato starch longer than corn starch. He says he cooks corn starch for 1½ hours and potato starch for two hours.

"I always cook potato starch about two hours," said Mr. Copeland, "and I have used potato and tapioca and corn. My experience has been that if you undertake to size soft yarn you must watch the squeeze rollers. If you put on a new blanket, it lets a lot more starch get by. You are using about all the starch you possibly can to make your soft yarn weave, and then if you put on a brand new blanket it lets just a lot more through, and regardless of the temperature of the cylinders you will have sticking. I keep two sets of rolls on hand for that purpose, and in changing rolls, I put the blanket from underneath on top and put the new blanket underneath and I do not put a fresh blanket on the top. We run a range of speeds from 50 yards a minute down to 8 yards a minute, and I run 8 yards a minute on tapestry warps, 6s and 8s,

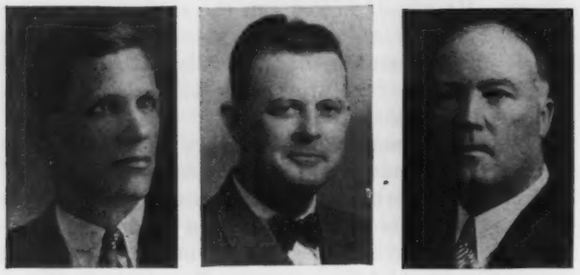
(Continued on page 87.)

STA Hears Research Discussed and Enjoys Myrtle Beach Meeting

THE 27th annual convention of the Southern Textile Association, held at Myrtle Beach, S. C., on June 14 and 15, was featured by an interesting discussion of practical research in textile manufacturing; talks by the president, Culver Batson, and by T. H. Webb and W. M. McLaurine, president and secretary, respectively, of the American Cotton Manufacturers Association. New officers were elected, as follows: President, John A. McFalls, general superintendent, Entwistle Mfg. Co., Mills No. 1 and No. 2, Rockingham, N. C.; vice-president, Fred L. Still, superintendent, Victor plant, Victor-Monaghan Co., Greer, S. C.; chairman of the board of governors, Edwin M. Holt, manager, Erwin Cotton Mills Co., Cooleemee, N. C.; executive secretary, Marshall Dilling, of Gastonia, N. C.; and secretary-treasurer, D. H. Hill, Jr., of Charlotte, N. C.

Five new members were added to the board of governors: W. H. Hardeman, manager, Consolidated Textile Corp., LaFayette, Ga.; M. T. Poovey, superintendent, Mill No. 2, Hannah Pickett Mills, Rockingham, N. C.; J. C. Cobb, Langley, S. C.; L. J. Rushworth, superintendent, Riverside division, Riverside & Dan River Cotton Mills, Danville, Va.; and Webb Durham, technical assistant, Winnsboro Mills, U. S. Rubber Products, Inc., Hogansville, Ga.

The first session was held on Friday morning. After the address of welcome by Vice-President John A. McFalls, Culver Batson, manager, Consolidated



Left to right: Culver Batson, the retiring president; Fred L. Still, new vice-president; and John A. McFalls, the new president of S. T. A. . . . .

Textile Corp., Lynchburg, Va., president of the association, made the annual address of the president. Mr. Batson referred to the progress made in the association work, and urged continued co-operation with it, and also emphasized the importance of aiding the technical schools and their graduates, and of encouraging the work of night or part time schools. He referred to the rapid growth and development of textile manufacturing in this country, and pointed out that the responsibility for much of the future development is in the hands of the operating executives. He said in part:

"The future of our productive units depends to a great degree on how we conduct the operations of our individual departments and plants, and the future of the industry in America, and more particularly for us in the southern states depends additionally upon how we prepare the way for our successors, and the first step is to adequately prepare ourselves.

"Our industry has, in addition to a physical growth, made considerable strides in technological advancements. Workers, engineers, chemists and industrial leaders of the past have contributed to this progress, some in this country and many in other lands. It has been a long step from the throstle of the early day to the high speed, long draft, large package spinning frames of today. From the memorandum book of a superintendent of a prominent New England mill in 1855, I note that on a 204-spindle live spindle throstle frame, spinning 25s warp, he obtained a front roll speed of 50 with a draft of 7.5. On another day which he notes as a 'very damp day' he showed 49½ r.p.m. At that time the ring spindle was rapidly gaining favor with manufacturers of cotton, and he notes better speeds were obtained. Also there appears a remark to the effect that self-acting mules were fast replacing the old machines, and were particularly useful, as they 'required only children to attend them'. It is too noted that wages were for females, $2.00 per week, and men received 80 cents per day, exclusive of their board.

"A study of the history of textile manufacturing since the days of the barber, Arkwright, and the poor spinner, Hargreaves, the difficulties overcome by the keen minds of our predecessors, should be an inspiration to us to go forward with still greater effort in the development of the mechanical efficiency of our industry."

Mr. Batson next presented Thomas H. Webb, of Concord, N. C., president of the American Cotton Manufacturers Association, who spoke briefly. He complimented the Southern Textile Association on its work, and urged its individual members, under current conditions, "to give your very best thought, honest work, most reasonable, pleasant, considerate and courteous attention to your dealings with your superiors, and let the same thing apply to the workers under you down to the most humble scrubber in the plant."

Mr. Webb then read the following resolution which was passed in Washington on May 29, after the NRA was declared unconstitutional:

"Resolved, that the Cotton Textile Industry Committee, the Executive Committee of the Cotton-Textile Institute, and the representatives of affiliated branches of the Cotton Textile Industry recommend that the cotton textile industry make no changes in the conduct of its business during the interim caused by the United States Supreme Court decision, and urge the industry to accept this as its general policy.

Associate Members' Banquet

THE associate members division of the Southern Textile Association held its meeting at dinner on Thursday evening, June 13, preceding the convention of the parent body. This, the youngest division of the organization, is growing steadily. The meeting at Myrtle Beach, presided over by Chairman I. E. Wynne, of Charlotte, featured a floor show entertainment by the Marie Purl unit, which was received with favor by most of those assembled, which included not only the salesmen who comprise the division, but the mill men and their wives who were at the hotel on Thursday evening.

In the brief business session. new officers for the associate members division, for the coming year, were elected as follows: Chairman, W. B. Uhler, Borne Scrymser Co., Spartanburg, S. C.; vice chairman, Edwin Howard, Veeder-Root, Inc., Greenville, S. C.; and secretary treasurer (re-elected), Junius M. Smith, Textile Bulletin, Charlotte, N. C.

"Resolved further, that we respectfully recommend that President Roosevelt exercise the prestige of his great office in a direct appeal to all industries to pursue a like policy."

He then read the resolution passed on June 7 by the American Cotton Manufacturers Association, in Charlotte, stating that the National Association of Cotton Manufacturers had on June 10 adopted a like resolution. The American Association resolution was:

"Resolved that the members of the American Cotton Manufacturers Association, assembled in Charlotte, N. C., on Friday, June 7, 1935, confidently recommend to all southern textile manufacturers that no changes be made in the conduct of the cotton-textile business.

"Resolved further, that the president of the American Cotton Manufacturers Association be authorized and directed to appoint a committee for observing and securing conformance by the members of the industry with this resolution."

Mr. Webb pointed out that these resolutions "put the industry on its honor", and that the operating executives "can be of worth in aiding the mill managements, to carry out the agreement as provided for by the resolutions. Don't try to take any short cuts in wages, hours, or in any other way that will bring reproach on the industry that is providing a living for you and your families. You have a wonderful opportunity, and I have faith that you will measure up to the requirements necessary for you to attain success as manufacturers and men."

Mr. Webb then called upon W. M. McLaurine, secretary of the American Cotton Manufacturers Association, who supplemented Mr. Webb's remarks by reading several letters sent out from his office, including one announcing the conformance committee for the South, and another to the members of that committee as to their duties. The third letter was one, signed by Mr. Webb as president, which went to every southern textile manufacturer, and which read as follows:

Left to right: Thos. H. Webb and W. M. McLaurine, who spoke at Myrtle Beach, and Edwin M. Holt, new chairman of the board of governors of S. T. A.

"This is an urgent appeal to you to rigidly observe conformance with the resolution adopted by the three hundred mill executives who met in Charlotte on June 7. There is every reason in the world for conforming and not a single legitimate reason for disregarding it.

"The nation is in a revolution of political change produced by economic conditions. To try to elaborate this statement is too much for a letter. The textile industry is no longer an individual industry acting within itself. Its actions influence the political thought of the nation. The individual unit influences the industry.

"The social thinking of people is induced by politics which in turn is influenced by economic conditions of the people. The National Industrial Recovery Act has been declared unconstitutional but many of the principles of the Act have not been declared or considered unfair or unethical by great masses of people. In fact, minimum wages, maximum hours and elimination of child labor have almost universal approval and those who try to disregard these principles are piling up trouble. The social mind of America has moved up a step and no wise man will try to move it back.

"Industry in America has repeatedly said that it can run its business intelligently. It now has the opportunity to prove its statement. If it fails, a constitutional amendment possibly will be written and adopted by this nation, giving to Congress the right to do what has recently been declared unconstitutional. I dare say that it will be so worded that many more controls can be legally applied. The NRA will look like conservative legislation when compared with the new program of government control, if industry fails to control itself.

"Rather authentic rumors coming out of Washington say that some political leaders hope industry will break down and show itself incapable of self government. Failure to conform with the resolution will absolutely destroy markets. It will create doubt, delay and chaotic prices. Failure to conform with this resolution will lend great assistance to political Washington in passing other laws now pending, which have been amended so as to conform to the constitution.

"Now, don't smile and drop this in the waste basket. File it away for reference.

"The trend of political thought in America today is toward centralized power and control. It is much more potent than the average man thinks. The economic condition of the average man produces the political thought. There are enough people who, acting under economic duress, can change the constitution regardless of what business and industry think. Do you want to contribute to this situation?

"Conform to the resolution and help keep American democracy, help the cotton textile industry progress and do a big thing for yourself and the people who work for you and enjoy the respect of the community in which you live."

Mr. McLaurine's remarks concluded the morning session, and the afternoon was devoted to golf and other recreations afforded by the beach resort. On Friday evening the annual banquet was held, with no speeches, but with some pleasing entertainment; the golf prizes and attendance prizes for ladies were awarded at the banquet.

The Saturday morning session, which concluded the meeting, was featured by the officers' election, and an extremely interesting paper on textile research, by Gaston Gage of the textile school of Clemson College. Mr. Gage's remarks, which will be of wide interest to operating men, appear in large part on page 43 of this issue of COTTON. There was a brief informal discussion on research following Mr. Gage's address.

S. T. A. Golf Tournament

THE annual golf tournament of the Southern Textile Association was conducted on Friday afternoon, with a number of prizes being given by the Association and its associate membership division and the Charlotte Textile Club. In the mill men's division, Joe C. Cobb, of Langley, S. C., won the low net prize, receiving for one year the cup awarded by the Charlotte Textile Club. W. H. Miley, Jr., superintendent, Erwin Cotton Mill No. 2, Erwin, N. C., won a silver platter for low gross among the mill men. F. Robbins Lowe, assistant superintendent, Locke Cotton Mills, Concord, N. C., received a platter as runner-up for low gross among mill men. Among the associate members, J. Hill Zahn, H. W. Butterworth & Sons Co., Charlotte, won the cup for low net, and W. B. Uhler won low gross. C. D. Brown was runner-up for low gross, and Hughes L. Siever, of Borne Scrymser Co., Charlotte, runner-up for low gross net, among the associate members. Consolation prizes for high scores were awarded to J. C. Daniel, of Clifton, S. C., among the mill men, and H. H. Burrow in the associate division.

The Arkwrights, Inc., Elect T. W. Mullen as President, and Make Plans for Reviving Work

At the Saturday morning meeting, officers of The Arkwrights, the research organization of the association, reported plans for reviving the work of this testing body. On Friday, a meeting of the Arkwrights present was held, and T. W. Mullen was elected president. J. O. Corn was made vice-president, and D. H. Hill, Jr., secretary-treasurer. A research committee consisting of Culver Batson, chairman, Marshall Dilling, and Robert W. Philip, Editor of COTTON, was appointed, and authorized to conduct research work on textile problems in collaboration with students in southern textile schools, and among the operating executives in the industry.

The new research committee has already begun work, and is considering among others a test to determine the amount of variation existing in the size of yarn throughout a bobbin. D. H. Hill, Jr., Charlotte, N. C., is secretary of The Arkwrights, Inc., and will welcome inquiries from any mill men concerning the work of the organization, and will furnish information as to how application for membership may be submitted.

THE PIONEER--By William P. Jacobs

The first of a series, taken from Mr. Jacobs' new book, and presenting the life, record and achievements of Captain Ellison A. Smyth, and others

WE BEGIN here the reproduction in large part, in serial form, of "The Pioneer", a new book by William P. Jacobs delineating the life record and character of Captain Ellison A. Smyth, with several chapters devoted to others in the long line of outstanding leaders whose ability, courage, vision and strength built the great textile manufacturing industry of the South.

We share the author's feeling that at this or any other time, there is a source of inspiration, knowledge and example to be gained from a study of these pioneers who against heavy odds created in the midst of the agricultural South of the past century a vigorous, successful manufacturing industry, and laid the beginnings of and largely developed the southern textile industry as it stands today.

In tribute to these pioneers, and in order to augment the distribution of their story, these chapters are reproduced here.—The Editor.

Introduction*

THIS volume is dedicated to the pioneering spirit, and is intended to magnify the value of individual initiative and laud its effect upon history. It is merely incidental that the story is largely based upon the life of an individual, Captain Ellison Adger Smyth. In his interesting life, however, is found such a perfect example of the constructive influence of a pioneer that the story of his life is woven into each phase of the subject. * * *

In the natural evolution of political thought, we, a democratic people, have reached that state of skepticism in which no custom, no ideal, no tradition, is immune from taint and suspicion. Recognized political processes of the past are torn apart. Sacred traditions are thrown into the discard. Ideals once venerated are torn down and supplanted with the thought of a new day. Objectives which seemed absolutely essential are forgotten in the light of mass determination. Lives of our forefathers are discredited. The individualist of the past is lost in the shuffle of a new deal.

We look upon ingenuity as untrustworthy. We proclaim ambition the height of folly. We call individuality selfishness. We decree that solidarity is unscrupulous. We decry energy, discredit thrift, ridicule accumulation and damn wealth to "everlasting perdition". Such is our national temperament that we betray the very pioneering spirit which has brought us to our present state of civilization.

Possibly if this volume can bring us a bit closer to the fundamentals of progress, if it can impress upon our memories a few of the precious old landmarks upon which our present civilization has been built, it will have contributed something toward the evolution of thought of the day. In periods of emergency and of transition it is well for mankind to consider the future in the light of the past. There is no better guide. Nor is there ever a condition experienced which has not in some manner faced mankind before. We have emerged from every depression, every period of privation, purged, quickened and better fitted to compete with the future. Our accomplishments and ultimate stabilization after each period of emergency have been the result, not of mass thinking, but of the constructive leadership of political, financial and industrial pioneers who have led us out "of the house of bondage and out of the land of Egypt".

We can well afford to measure the efforts of our pioneers of the past and attempt to utilize the secrets of their successful battles of the past in overcoming depression and privation.

There is little difference between the worker and the capitalist, between the employer and the employed. In the beginning, man is a hired worker, then a dreamer, and ultimately if possessed with initiative he becomes in turn an idealist, an individualist, a pioneer, a leader, a capitalist and a philanthropist. The only difference between the communist and the capitalist is capital. When the socialist becomes rich he begins to believe in the protection of property. When the capitalist becomes poor he vents his spleen upon all who are fortunate enough to remain wealthy. Some individuals have the capacity to rise higher than others, to accept more responsibilities than others. Some are unable to care for themselves, whereas others are capable of caring not only for themselves but for the welfare of hundreds of thousands of others as well.

The success of the industrial pioneer is measured by his knowledge of how to work; his capacity to dream and plan for the future; his determination to follow lofty ideals; his self reliant individuality, his vision, his qualities of leadership, his philanthropic spirit. With most men capitalism is reached only after heart-breaking, soul-testing privations and abounding energy. With most men wealth comes only by bringing wealth (or a livelihood) simultaneously to thousands of others. No business transaction is so successful, so profitable and so lasting as the one which is profitable to all concerned.

Captain Ellison Adger Smyth, the pioneer, whose life is the inspiration of this volume, followed in his training and development all the usual evolutionary steps through which the pioneer passes.

The Background of Captain Smyth

FOR the purpose of this volume it is well for us to turn back and for a moment have a glimpse at the family and community life which existed around the middle of the nineteenth century. Perhaps we might select a day in the year 1863, when young Ellison Adger Smyth, at the age of sixteen, stood on Charleston battery watching the attack on Fort Sumter, and before that the attack of the "Star of the West," a steamer which tried to land supplies at Fort Sumter for the garrison. The home of young Smyth's father was only a half block from the battery, and was twice struck by shells during the bombardment of the city in 1863.

Or, perhaps, if we prefer a less turbulent period for a better study of the standards of living enjoyed during the period of the development of industrial giants, we should turn to the years before the War Between the States, when in young Smyth's home city of Charleston, as elsewhere, life was most agreeable and pleasant, and prosperity was enjoyed. True, there were no electric lights, no motion pictures, no running water, no sewerage, no paved streets (except those that had been covered with cobble stones), no street cars.

Compared even with our periods of depression during the years 1932, '33 and '34, the people of those days were relatively poor, but happy and contented. The labor of a man's hands was limited, as was the compensation therefor. One was an individualist by nature, and by necessity. Self-reliance and resource-

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(*) Abridged from the introductory chapters by the author.

fulness were two of the prime requisites which by intuition, as well as by the hard knocks of life, were instilled into the hearts of the younger generation of that time.

Picture, if you will, the early days of young Ellison Adger Smyth, in a period in which the manufacturer was turning from the old hand loom to the newly-developed machine, which did the work of many. Picture a time when electricity was unknown; when industrialists were groping, with perhaps the inner feeling that just ahead lay gigantic developments and startling discoveries which would revolutionize their activities. Picture a world in which agriculture, merchandising and shipping filled the lives of the business men of the day; when the secret of quantity production was yet to be learned, when the younger generation were trained in the hard school of experience; when news traveled slowly; when man seldom got an accurate picture of the conditions beyond his own immediate environment; when business was completely surrounded with mystery; when the world needed young men who possessed the pioneering spirit, and men who could look forward into the future with confidence.

Picture the time when correspondence, bookkeeping and other clerical details represented laborious methods and painstaking care. Picture the time when the securing, the execution and the delivery of an order of merchandise at a distance involved not days, but months, and sometimes years. Picture the time when there were no telephones, no telegraph, no wireless, no radio, and communication was slow and uncertain. Picture a time when the city of Charleston was the metropolis of the South, led all other southern ports in shipping, and was the center of a prosperous agricultural region. Picture a time when its ships were almost the only sure means of communication between the South and the outer world. Picture, in such a period, the innumerable hardships which faced the younger generation, the almost insurmountable difficulties; and you can better appreciate the spirit of the pioneers who were born and trained in that period, can better understand how natural it was for them to be capable of assuming the leadership through the years of rapid transition, which followed.

By the study of such a picture you can better understand how our pioneers of today were providentially born and reared for the responsibilities which were later thrust upon them.

Before the war, young Smyth knew very little about the meagre industry which existed in America at that time. He only knew that Charleston was very prosperous and wealthy. It was one of the principal ports of the Atlantic Coast. Immediately following the War Between the States, all industry, as well as agriculture and commerce, and much of shipping, was at a dead standstill. Nothing was developed; nothing was being done. The only development in the vicinity of Charleston, worth the name at the time, was found in the mining of the phosphate rocks and the early development of the fertilizer works.

At the time when young Smyth became of age, as he did during the Reconstruction period, in the midst of its turmoil and strife and bitter misunderstandings which resulted, it took a man of vision and courage to thoroughly appreciate the natural resources of his country, and to anticipate the development of such resources; but young Smyth was a man of vision. He appreciated the South's greatest assets. He valued the delightful climate of the Piedmont plateau where the oak trees grew. He saw in such equable climate exceptional opportunities for industrial development and health and life. He saw the possibility of a great abundance of water power. He saw the masses of the people, who were then toiling on the farms, in competition with the colored race

Captain Ellison Adger Smyth (1935)

An interesting camera study made at the Captain's home in his 87th year . . . .

but eager for the advancement of their social condition, and who were thus capable of developing into a class of labor profitable both to themselves and to those about them, capable of earning and enjoying higher standards of living, capable of forming the backbone of gigantic manufacturing enterprises.

He visualized great cotton mill villages, with their schools, their churches, their higher standards of civilization; and he visualized the tremendous improvement in the health and intelligence of the white race.

It takes vision in darkest periods to see the silver lining of a cloud, to adequately measure and appreciate the enormous potentialities of latent assets; and young Smyth had this vision.

However, pioneers are not made over night. Young men may have vision, but in a restricted environment their vision may be clouded by lack of practical knowledge and experience; and Ellison Adger Smyth had this very severe handicap from the beginning, for his early training was in the field of commerce rather than in industry. He had no practical knowledge of manufacturing, even of his day; nor did many other young men of his early acquaintance have such a privilege. It was a great hindrance to him in furthering his ideals.

The enterprising young men of his day found it practically impossible, with the lack of knowledge of manufacturing, to secure adequate capital for, and encouragement in, the development of manufacturing enterprises. And in spite of the latent possibilities of the unskilled help of the South, they were still unskilled, and utterly lacking in experience of manufacturing. Thus both management and workers had to learn slowly by experience, by the most laborious methods, in spite of many set-backs and handicaps. But it is to their everlasting credit that they learned. They were filled with a determination to better themselves; filled with a desire to learn; and learn they did.

Immediately following the War Between the States, capital was extremely shy, when indeed there was any capital left. No one had confidence enough in manufacturing; no one knew enough about manufacturing to be willing to invest money in an experimental business, and the embryo pioneer was ever troubled with the subconscious feeling that he was taking great risks both for others and for himself.

In young Smyth's own case, reared as he was in a city of limited area, where he was bound in on every side but one by water; where real estate was comparatively high in price, and far removed from areas that were better suited for industrial development, he found great difficulty, even after securing financial support, in removing the local capital of Charleston to other areas. In his day the financing of a cotton mill was close akin to the grub-staking of a miner. He saw great possibilities ahead, but he also was forced to undergo great risks and face great uncertainty, and the possibility of the loss of his entire estate. Young Smyth naturally faced the problem of proving to the good people of Charleston that there were too many difficulties to overcome in the development of industry in the city of Charleston, but that still they should invest in spite of the fact that their investment would be used for the development of enterprise that would give employment to others, and would develop industry elsewhere than at home.

It required great faith for young Smyth to reach the determination that his greatest field of activity was in the field of industry; that he must strike out on his own, at a distance, in an effort to reach his ideal. But he had faith in the proposition which he was considering. He had faith in himself that he, with ample funds provided, could carry through to a successful ending the experiment considered. This same faith followed him through his entire life, and encouraged him to reach out continuously, and each year's experience added confidence to his faith and a more definite form of assurance. But Ellison Adger Smyth had more than faith. He had an abundance of the attributes which he in later life stated he would like to see in his progeny; that is, a high sense of personal honor; regard for any contracts entered into; consideration for the feelings of others; generosity; firmness in dealing with so-called charitable objects; loyalty to his church, and a very definite independence of judgment. * * *

And so it was that in such an environment Ellison Adger Smyth began a career which earned for him ultimately the right to be called one of the South's greatest pioneers in the field of textile manufacturing, as perhaps better expressed, September 1921, in the publication *Commerce and Finance* of New York:

"If a vote should be taken as to the man best entitled to be denominated as Dean of Southern Cotton Manufacturers, the honor probably would fall to Ellison Adger Smyth (then) president of the Pelzer Manufacturing Company at Pelzer, S. C. The textile industry that has made such a busy industrial center of the Atlantic Seaboard state, is conducted largely by relatively young men—men of the New South, as Grady would have described it. Mr. Smyth is a veteran in this calling. He is one of the few remaining links between the Old and the New South; and although he is 72 years of age, a striking and dignified figure, he is alert and active as many a business man in comfortable middle age."

The early life of Ellison Adger Smyth had little connection with industry. He was born in Charleston, S. C., on October 26, 1847, the son of Rev. Thomas Smyth and Margaret M. (Adger) Smyth. The great-grandfather ancestor of Ellison Adger Smyth was William Ellison, who came to America from County Antrim, Ireland, in 1741. Another great-grandfather, Robert Ellison, was a major in the Continental Army, and later a state senator and one of the founders of the Mt. Zion Society, afterwards merged with South Carolina College, now the University of South Carolina. Ellison Adger Smyth's grandfather, James Adger, was a merchant and banker in Charleston. Ellison Adger Smyth was educated in the private schools in Charleston, and later at the South Carolina Military Academy, and entered the Confederate Army in 1864 at the age of sixteen and remained in the army until the surrender of General Johnston in 1865. In the Confederate Army he was under Johnston, stationed on the coast, and in their retreat Capt. Smyth was transferred from the 43rd S. C. Volunteers to Cadet Corps. He was in the state troops at the end of the War and never surrendered. The Cadet Corps claim to have been the first that entered war and they were the last to stop, and they never surrendered.

Ellison Adger Smyth, the youngest son of Thomas Smyth, entered the field of business upon leaving the army in 1865, and was employed as junior clerk in the wholesale establishment of J. E. Adger and Company, of Charleston. * * *

Young Smyth married Julia Gambrill in 1869. She died in 1927. She was the daughter of Lancelot Gambrill of Baltimore, who later was engaged in the cotton business in Columbus, Ga.

Boyhood and Early Life at Charleston

The early years of Ellison Adger Smyth found him engaging in the typical life of a flourishing port city, boating and yachting in the beautiful Charleston Harbor. The water was a source of great relaxation and enjoyment for many years. And in his younger days the nautically-minded boasted of two strong boating clubs in Charleston—one the Palmetto, of which young Smyth became president; the other the Carolina. Shell races, with a crew of four, and sculling races, with only one, were frequent; and often the program was interspersed with meets between the yacht clubs of Savannah and Charleston.

Life must have been most pleasant to young Smyth as he learned to navigate the thousands of inlets, creeks, and rivers, which are so abundant on the irregular Carolina coast.

One can easily recognize in Captain Adger Smyth of today the far-seeing eye of the pilot and captain, the stern expression of the sea-going man, the upright carriage of a soldier; for even in the eighties Captain Smyth still bears testimony, in his every step and expression, to the fact that his early training was of the sternest and most exacting nature.

Thousands of interesting stories could be told of the experiences of those who are living today, and have gone through the trying period of the Reconstruction. Young Smyth's unique escapades, during the period which embraces South Carolina's darkest hour, are most interesting.

He lived through the Reconstruction days in Charleston; and immediately after the war closed, Charleston was filled with the country negroes, who were, for the first time in their lives, enjoying freedom. It was perfectly natural that the new-found freedom should be accompanied with abuses—abuses unfortunately which brought much disease and suffering upon those who were turned loose on the world, drunk with the idea of freedom, yet incapable of that self-restraint which is so essential to citizenship. * * *

Undoubtedly Captain Smyth's military experiences in trying times made him the stern disciplinarian that he is today, and secured for him the outstanding qualities which have marked his many successes in the industrial field. The true pioneer must be a good soldier and a leader of men, and in this respect Captain Smyth's qualifications were outstanding.

The earliest pioneers were the explorers. They blazed the trail. Following them others, pioneers to no lesser degree, served humanity by following the trail and improving it. Such was Captain Smyth's commission. He did not discover a new territory. It would be unfair to those who went before him to attribute to Captain Smyth the ingenuity and foresight which were responsible for the first conception of the possibilities of industrial development in the Piedmont region. There were others, no doubt, who had the same conception and the same inspiration. Few others, however, grasped the opportunities as eagerly and as vigorously as did Captain Smyth.

No pioneer will plunge ignorantly into the unknown. Every pioneer is actuated by the experiences or the inspiration of others who have gone before, or who have had the same conception.

Influences on Early Business Life

Undoubtedly the active life of Captain Smyth was very largely influenced by the accomplishments of others in the field of industrial exploration. Captain Smyth recalls with a great deal of enthusiasm the experiences of Dr. St. Julian Ravenel of Charleston, who in the Captain's early boyhood first called attention to the phosphate rock in South Carolina, and its use for fertilizer purposes. He was a pioneer in his field, as was Colonel Joseph A. Yates, another capitalist in Charleston, who immediately followed with an organization of land companies, mining the land's rock, and in dredging a river for the rock. Mr. Robert Adger, an uncle of Captain Ellison Adger Smyth, organized the Coosaw Mining Company that operated on Coosaw River, paying $1.00 per ton royalty to the state for the privilege. * * *

Another Charlestonian who had quite an influence over the career of Captain Smyth was William Gregg, formerly a jeweler of Charleston, who bought the Graniteville Cotton Mill about 1844. Mr. Gregg published a number of addresses and pamphlets which Captain Smyth secured and read. The pamphlets urged the establishment of cotton mills in the South that employment might be given to the white tenant class. These pamphlets made a great impression on young Smyth, and had much to do with encouraging him in entering into the cotton mill business.

Incidentally, in 1881, Mr. H. C. Langley purchased a building that had been used for printing money for the Confederate Government, and turned it into a cotton mill. It proved to be a great financial success, thus encouraging young Smyth still further in his determination. Likewise, The Piedmont Manufacturing Company, the first mill built by Colonel H. B. Hammett of Greenville in 1873, had also a remarkable success, and a great influence over the decision of Captain Smyth to enter the business.

About the same time, Mr. D. E. Converse, who was employed by the Little Glendale Mill, organized the Clifton Manufacturing Company, and Captain John H. Montgomery of Spartanburg organized the Pacolet Manufacturing Company.

These outstanding pioneers in the textile field established the Piedmont, Clifton and Pacolet Mills about the same time Captain Smyth actually began the building of his first mill at Pelzer.

Colonel Hammett, Mr. Converse, Captain Montgomery and Captain Smyth were all tall men, and when they appeared together before the Railroad Commission or the South Carolina Legislature, as they often did, they were referred to as the "Big Four." Later, Colonel R. L. McCaughrin, of Newberry, organized the Newberry Cotton Mill, and he was added to this group of textile pioneers in South Carolina. The Newberry Mill and the Piedmont, Clifton, Pacolet and Pelzer Mills, were all very successful manufacturing enterprises.

In 1921 the publication *Commerce and Finance* was so impressed with the remarkable growth of the textile industry, that they were led to ask who had been the leaders in this very important development; and being unable to answer the question to their own satisfaction, they determined to take the opinions of those whose knowledge of the subject was more complete than their own. They therefore addressed a questionnaire to at least one officer of every important cotton manufacturing concern in the South, asking him to consult with his principal officers and designate the six men, living or dead, who in their opinion were best entitled to be considered as leaders by virtue of what they had done—or were doing —not only for their own enterprises, but for the interests of the southern textile industry as a whole. They included the dead as well as the living because they realized that the marvelous growth of the cotton manufacturing industry in the South was largely due to the vision and self-sacrificing enthusiasm of the many men who, like Moses, were taken away before they could enter the Promised Land to which they led their followers, and the publication was anxious to pay tribute to them, as well as to the leaders who are still in the flesh.

As a result of the ballot, the following outstanding leaders in the industry—some deceased—were nominated for the honor: Captain Ellison A. Smyth, then of Greenville, S. C., affectionately known to the whole trade as "The Captain"; J. W. Cannon of Concord, N. C.; Fuller E. Callaway of LaGrange, Ga.; Caesar Cone of Greensboro, N. C.; D. A. Tompkins of Charlotte, N. C.; J. H. Montgomery of Spartanburg, S. C.; Lewis W. Parker of Greenville, S. C.; W. A. Erwin of Durham, N. C.; H. R. Fitzgerald of Danville, Va.; Leroy Springs of Lancaster, S. C.; Stewart W. Cramer, of Charlotte, N. C.; D. E. Converse of Spartanburg, S. C.; Henry P. Hammett of Greenville, S. C.; E. M. Holt of Graham, N. C.; and D. Y. Cooper of Henderson, N. C. The first six were elected.

While this volume lays no claim to complete historical recording, it does present briefly the outstanding events of the lives of a few of the active textile pioneers, contemporary with Captain Smyth. These biographies are presented in the chapters which follow in alphabetical order. There were many prominent and successful pioneers in this state, however, whose lives are not presented in this volume.

There were, no doubt, many other men in the textil field who preceded Captain Smyth in his efforts, and whose lives served as a guiding beacon. There were many others, contemporary with the time of Captain Smyth, who labored as he labored, and whose successes undoubtedly spurred him on to greater accomplishments, and contributed toward the development of a great pioneer. * * *

Captain Smyth is still actively engaged, at the time of the writing of this volume, in cotton manufacturing. Four of his grandsons are likewise actively engaged—Ellison Smyth McKissick, Ellison Adger Smyth, III, Edward Blake and Thomas L. Smyth. Two of his sons-in-law are also mill executives—A. F. McKissick of Greenville and Lewis D. Blake of Belton. His daughter, Mrs. Margaret Smyth McKissick, can claim the unique distinction of being simultaneously the daughter, the wife, the mother, the sister-in-law and the aunt of cotton mill executives. The spirit of Captain Ellison Adger Smyth is still beckoning to enterprising young men, far beyond the confines of his own family. The Captain is passing on the good word of William Gregg—the word which made such an impress upon his own life

(To be continued)

CURRENT TEXTILE TOPICS ....

Talk of the Month

IT HAS been the province of the textile industry to pioneer in many ways and that is no less true in the current phase of conditions than of old. There was first the great pioneering movement of mechanical production and when that was stalled by abuses, the industry took steps toward a remedy. The leaders saw the social-economic problem ten years ago. By reason of that fact, this industry was the first ready for the great experiment of the NRA, as President Roosevelt pointed out. Textile manufacturers were desirous of the perpetuation of the NRA principles and again were at the forefront when voluntary action was made essential by the Supreme Court decision of May 27.

Textile industry pioneers again in new situation

All of which is of serious import to the welfare of the whole country, since the ramifications of cotton manufacture are so tremendous. Here is the textile branch of greatest size and the largest single employer of industrial labor in the country; a dominating element in one of the three prime essentials of human life—food, clothing and housing. The heads of the cotton industry, therefore, have a privilege and obligation second to no economic or political element. By the same token, the industry has the right to expect co-operation from all the forces of the nation, but it feels keenly that this has not been accorded by the AAA or by the Administration on such matters as imports and processing taxes.

Approaching the second half of the year, cotton manufacturers remained in a perplexing position. The invalidation of the NRA had put them on their own resources and the immediate result was a test of self-government. In one sense, it was the first test of that self-government which the government declared at the start to be the objective of the NIRA. As far as the mere operation of the cotton industry was involved, the date of June 16 passed with an encouraging situation and prospects. The statistics of cotton consumption in May were significant of adherence to the curtailment below the code maximum levels: the reports of the Cotton Textile Institute, as well as the two major associations North and South, were significant of nearly 100 per cent adherence to the main principles of the code.

Curtailment was correcting a serious statistical condition at a time when it was distinctly essential. The market was enabled the better to stand the pressure of extreme dullness in buying when buyers saw a break in prices threatened by the passing of the NRA at the end of May. Indeed the quick and positive action by manufacturers not only stabilized the market: the continued curtailment actually created an improved condition of stocks with orders slow, while the universally maintained wages and mill shifts served notice on buyers that costs would hold, so prices could not reasonably be expected to weaken.

At the time of writing, however, the determination of the Administration remained a thorn in the flesh for cotton manufacturers. The Cabinet Committee was preparing its findings and forecasts were that important new data would be forthcoming. The all-important matter of the processing tax held forth as a stumbling block to the industry as it faced the prospect of a favorable broad upward trend in the economic sphere for the fall. Some excerpts from an address by Ralph E. Loper, well known industrial engineer, on October 18, 1933, have a peculiarly graphic application to the marketing outlook for the season a full two years later:

Mr. Loper Said in 1933

"Actually this tax (the processing tax) will collect from the consumers in one year more than the combined net profits of the cotton textile industry during the best year it has had since the world war . . . With improvement in general business, textile prices are still going to remain dangerously close to manufacturing costs unless mill executives watch their increasing costs very carefully and insist upon a price which at least includes something toward interest on investment . . . This in turn is the best assurance to our employees that the improvement in wages and working conditions resulting from the code will be sustained."

Cotton manufacturers, along with other industry, demonstrated a wholesome and unreserved spirit of co-operation with the Administration two years ago in its effort to establish a New Deal. But whereas the industry did its part in making adjustments suggested, it has had to suffer a spirit of antagonism rather than co-operation when making requests for modification of some points in the program. In fact, it has been misrepresented on the three great points which have been demoralizing the mills: a proposal for change in method (not abrogation) of relief for farmers; action to restrain imports of Japanese cotton goods; legislation for fair representation of labor, versus domination by unrepresentative union heads.

The industry has no alternative but to continue its efforts against the discriminatory processing tax, if it is to survive. Mills both North and South have brought the matter into the courts accordingly for a test. Meantime, the toll of the industry—and jobs of the workers therein—continues. On the import case there is likewise the imperative need of continuing work for restriction, to save mills and employment. As to the labor issue, as stated by the *Iron Age*, the famous section 7-A, "driven through a labor-lobby-subservient Congress, set forth the principle that the interest of employers and employees are opposed." Since the strike of last fall was demonstrated as one of union leaders to gain domination

rather than of workers against employers, industry faces the need of impressing upon law makers the true relationship, whereby right legislation may be secured.

New England Mill Situation

PROBLEMS continued, though in modified form, and hopes deferred kept the mill situation in New England at the middle of June in an unsatisfactory state. The adjustment to voluntary control was achieved in a healthy way, but abrogation of the NRA on May 27 meant weeks of poor business for the mills. This led to extension of the general curtailment by individual units. An aggravating case was the deferred hopes of relief from the processing tax, the growing competition of Japanese goods and other elements of uncertainty in which changes depend upon government action. The most favorable aspect of things was the talk of a good fall business in general provided sound conditions of industry were maintained.

Matters came to a more serious head over the AAA program during the past month. There was talk of further liquidations, with consequent unemployment and greater hardships for New England textile communities. Some definite announcements of changes in important mill units were recorded. The great Amoskeag Company was among those which announced plans for cutting operations beyond the organized curtailment by groups, because accumulation of stocks under the current conditions was regarded as otherwise than a safe and sane policy to pursue.

With conditions imposed or countenanced by the government still making profitable operation impossible, the open defiance of Administration officials to suggested changes has naturally raised bitter resentment in place of previous hearty co-operation among cotton manufacturers of this district. Frank W. Dunham, chairman of the Chamber of Commerce Committee on Industrial Conditions in New England —a group organized to make a broad study of textile conditions and stir up general community interest in salvaging what remains of the industry— recently urged the people of New England to continue their protests against the cotton processing tax, and the newly introduced AAA amendments. He indicated the way of AAA propaganda, which has been the subject of justified resentment here, as follows:

"Apparently every New England citizen who wrote or wired President Roosevelt with regard to the problems confronting New England's greatest industry has received from the Department of Agriculture a copy of Cully A. Cobb's address which is supposed to be the answer to our appeal for help. We asked for help—for some other method of tax collection for farm relief than the processing—and we get a speech—a speech delivered over the Dixie Network to cotton planters which tries to show that New England wants to take away farm benefits."

The AAA propaganda machine, said Dexter Stevens, vice-president of the National Association of Cotton Manufacturers, has "deliberately and consistently misconstrued the attitude of the cotton textile industry toward benefit payments to harassed farmers. The farmer is one of the industry's best customers. We want him to be prosperous. The industry approves the benefit payments, but not the Wallace method of collecting the money." In this situation, Lincoln Baylies, publicity chairman of the northern cotton mills Policy Committee, urged that Congress use its powers to correct the condition, by providing relief for both agriculture and for the industry.

Elimination of the NRA produced a condition in Massachusetts which demanded legislation if the State textile mills were to be allowed to join the national movement in maintenance of the status quo. The matter is up for action when this is being written, with the Governor, the manufacturers and labor all in favor. The 48-hour law is maintained, but until modified with the inauguration of the Nira program, there was a provision that prohibited employment of women after 6:00 P. M. In the emergency, the time limit was suspended, with the law allowing women's work till 10 at night. Thus the mills of the state were enabled to restore two-shift operations in consonance with general conditions of the industry at large.

While the 40-hour, two-shift schedule of mill operation is being maintained in this section, the adjustment of output to demand remains a basic problem. The voidance of the NRA has made it expedient for mill men to move cautiously in suggesting changes and talk of a single-shift week for the whole industry has subsided. It is manifest, however, that resumption of normal demand in the American markets and restoration of foreign markets for our cotton goods is necessary to maintain the current schedules if they are not too extensive even for such demand.

So long as buyers have the whiphand because they know mills can operate to fill the demand quickly over short periods, the industry cannot fulfill the ideal of steady production and employment. The prospect of a demand which would occupy the mills regularly on two shifts of 40 hours a week is manifestly a far distant one. The excess of capacity has been shown in the emergency period of sub-normal demand, by the recurrent curtailment periods. Of course there are units built up to the two-shift plan in which a change to single shift would be difficult. Unless business booms, however, it is only by some such adjustment that mills north or south can force buyers of goods into a reasonable attitude on ordering ahead and paying fair prices. This is the opinion of prominent textile individuals.

Uxbridge Has Bought Georgia Mills

IT IS understood that the Uxbridge Worsted Company, of Uxbridge, Mass., which recently acquired the plant of the Adams-Swirles Cotton Mills, Macon, Ga., has sold the existing cotton looms, and is revamping the yarn manufacturing equipment; and will install Model X looms in this plant for manufacturing combination cotton-worsted fabrics. The Uxbridge company has also acquired the plant of the Standard Cotton Mills at Cedartown, Ga., and installed 60-inch woolen and worsted looms there. Donald Barnes is in charge of these plants.

COMMENT ON THE COTTON MARKET

New Orleans, June 15, 1935.

THE trade had much to contend with during the past month—the government cotton pool activities, talk of the possibility of a shortage of free cotton before the new crop begins to move to market in volume, the disposition of the bonus bill, political and monetary disturbances abroad, more generous rains in the western belt and too much moisture in the Mississippi Valley states, the uncertainty as to extending the 12-cent loan to cover the 1935 American crop, the decision of the United States Supreme Court nullifying the NRA and its implications regarding the legality of the AAA program. Subsequently a better feeling developed concerning loan and crop control prospects, the French financial crisis and the European political situation improved, and some doubt developed as to progress of the growing crop owing to the further excessive rains in the Southwest and in the central belt, with low night temperatures, especially in the Atlantics.

Another sustaining influence was the announcement from Oscar Johnston that he had bought 25,000 bales of the certificated stock and stood ready to purchase the balance, and even to sell pool cotton in the event a "squeeze" developed in the July option. With the passing of the July position the pool manager said he would decertificate any stock he had and place it with the pool supplies. In other words the government apparently has come to the support of the July position, but proposes to prevent any abnormal price. The total certificated stock at the eight delivery points on June 15 was only about 44,000 bales, or only about one-fifth of what it was at this time last year.

BRITISH BOARD OF TRADE REPORT FOR MAY

Year—	1935	1934	1933
Exports of yarn, pounds	12,000,000	11,000,000	11,000,000
Exports of cloth, yards	158,000,000	151,000,000	169,000,000

CENSUS REPORT FOR MAY

United States—— Bales—	This season	Last season
Consumption of lint in COTTON GROWING STATES, May	378,909	416,440
In New England States	66,249	88,782
In All Other States	24,092	14,077
In the United States	469,250	519,299
Consumption of lint in COTTON GROWING STATES, 10 months	3,662,710	3,967,451
In New England States	708,904	865,260
In All Other States	194,507	144,329
In the United States	4,566,121	4,977,040
Mill stocks, May 31st	979,130	1,422,165
Mill stocks, April 30th	1,060,946	1,584,620
Stocks in public storage, May 31st	6,560,247	6,560,165
Stocks in mills, public storage and warehouses, May 31st	7,539,377	7,982,330
Stocks in mills, public storage and warehouses, April 30th	8,262,641	8,678,922
Active spindles during May	23,027,780	25,895,778
Active spindles during April	23,853,816	26,485,114

AMERICAN COTTON

Aug. 1 to June 14— Bales—	This season	Last season
In sight (marketed)	8,859,000	12,745,000
Exports from U. S., inc. Canada	4,599,000	7,187,000
Spinners takings, world	10,046,000	13,253,000
Stock at all U. S. ports, June 14	1,491,000	2,668,000

The supply of free cotton in this country, cotton not under government control, is small, as are domestic mill stocks, but consumption of American is still running smaller than last year, and while the crop is generally late, especially in Oklahoma where it is very late, it is reported early in the southern third of the belt, particularly to the east of the Mississippi.

Recently the New York Cotton Exchange service issued the following estimates:

WORLD'S CONSUMPTION OF COTTON

During April—	This season	Last season
American, running bales	951,000	1,161,000
Foreign, bales of 478 lbs. net	1,150,000	1,018,000
World, all kinds	2,101,000	2,179,000
From Aug. 1 to April 30—American	8,634,000	10,585,000
Foreign	10,511,000	8,703,000
All kinds	19,145,000	19,288,000

And stated to effect that, unless world consumption declines in the next three months, the total all cotton consumption this season will be around 25,400,000 bales, or about 3,000,000 bales in excess of production, which they estimate at about 22,399,000, thereby reducing the all cotton carryover to about 13,345,000 bales versus 16,345,000 last year, 16,255,000 year before last and the record of 17,412,000 in 1932.

For some time past the tendency has been to reduce private acreage estimates, but the revised figures, ranging from about 29,133,000 to 31,600,000 acres, are larger than last year's planted area of 27,883,000, of which only 26,987,000 were picked. Judging from private estimates released thus far the planted acreage this year promises to be about as large as the area harvested in 1933, which was 29,978,000 acres, which yielded an average yield per acre of 208.5 pounds and a crop of 13,047,262 bales of 500 pounds gross weight. Last year the crop was very small, due to the very small acreage and to the severe prolonged drouth in the western belt, the average yield per acre for the whole belt being 170.9 pounds and the crop 9,636,000 bales. Compared with year before last, last year's yield per acre in Texas was 112 pounds versus 185, and in Oklahoma it was only 56 pounds, the smallest on record, against 208 pounds. This year the crop outlook is more alike to that of 1933, promising a good crop, although the start is late, with favorable weather during the growing and maturing periods.

TOTAL AVERAGE RAINFALL IN TEXAS, IN INCHES

Year—	1935	1934	1933	1932	Normal
May	7.32	1.88	3.93	2.90	3.71
Nov. 1 to May 31	21.41	16.80	15.58	20.91	17.07

WHAT THE SOUTHERN MILLS ARE DOING

American Yarn & Processing Co., Mount Holly, N. C., has acquired the plant of the Catawba Spinning Co., at Mount Holly, where operations will be resumed.

A new one-story addition is being constructed at the North Carolina Finishing Co., Yadkin, near Salisbury, N. C.

Contract for the erection of a new two-story addition to the Cleveland Cloth Mills, Shelby, N. C., has been awarded to A. A. Ramsey.

Rock Hill Printing & Finishing Company, Rock Hill, S. C., is erecting a new one-story addition.

Sherman Manufacturing Co., Sherman, Texas, has placed contract with American Moistening Company for additional humidifying equipment of the atomizer type, complete with automatic control, to equip the spinning and weaving departments and the cloth room.

Strickland Cotton Mills, Remerton, near Valdosta, Ga., are installing new Saco-Lowell long draft spinning and roving. Single process picking and high speed warpers and winders have already been installed.

Southern Brighton Mills, Shannon, Ga., have awarded contract for the construction of a community building, 85x75 feet, two stories.

Clayton Cotton Mills, Clayton, N. C., have resumed operations as Whitley Cotton Mills, Inc., under the management of R. B. Whitley.

The Hosiery Processing Co., Rossville, Ga., is a new plant which has started operations in the former plant of Park Woolen Mills.

A new 165-foot addition, one-story, to house knitting and looping equipment, has been erected by the J. A. Cline & Sons Hosiery Mill, Hildebran, N. C.

Harriman Hosiery Mills, Harriman, Tenn., are constructing a large brick addition for new machinery.

Ashe Hosiery Mills, Knoxville, Tenn., have installed 100 additional knitting machines and have expanded to include the first two floors of the building formerly occupied by the Benton White Goods Mfg. Co.

A new plant for manufacturing men's seamless hosiery, and equipped with 25 Banner machines, has been started by the Clark Knitting Mill, Rutherfordton, N. C.

New machinery costing approximately $5,000 has been installed at the Champion Knitting Mills, Marietta, Ga.

115 TIMES A MINUTE

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PICTURE an air hose carrying full working pressure pounding and scraping across a rough concrete block over one hundred times a minute. No field service is half that rigorous!

But that's how Goodyear engineers set about developing a hose that would stand the rough usage encountered in mines, quarries and other heavy duty jobs.

One of the biggest difficulties was the cover—for when the cover scrapes through, the body weakens and soon you get a burst.

The "concrete beater"

To duplicate severest field conditions Goodyear engineers rigged up a machine they called the "concrete beater"—a motor-driven shaft through which air pressure could be applied, mounted over a concrete slab.

Then they coupled all makes of hose to this shaft—sent them thump, thump, thumping against the rough rock at full speed—115 times a minute—until the cover failed and internal pressure caused a burst. And at first Goodyear hose didn't last any longer than the others!

So the engineers started over—spent weeks in perfecting a new heavy duck body of special weave—a new and extremely heavy cover of high tensile, abrasion-resisting stock—and put it on the beater.

Hour after hour this new hose hammered against the concrete—*33 to 200% longer than other makes before the cover failed. And in total service it lasted 60 to 70% longer before bursting. Here, at last, was a hose that could "take it."*

That is how Goodyear Style M Air Hose was developed, and the records for long-lived, trouble-free, economical service it has piled up on the nation's hardest jobs proves it as superior as these first tests indicated.

Individually specified by GTM

Whatever type Goodyear Hose you buy--air, steam, acid, oil, paint, water or gasoline—will give you the same outstanding service because it, likewise, is specially developed to meet actual service conditions, and because every length is individually specified to its particular job by the G. T. M.—Goodyear Technical Man.

Many industries entrust all their hose problems to this qualified expert—perhaps he could cut your costs, too. A line to Goodyear, Akron, Ohio, or Los Angeles, Cal.—or the nearest Goodyear Mechanical Rubber Goods Distributor—will put his wide experience at your disposal.

BELTS · MOLDED GOODS
HOSE · PACKING
MADE BY THE MAKERS OF GOODYEAR TIRES

THE GREATEST NAME IN RUBBER

GOODYEAR

NEW TEXTILE EQUIPMENT AND PUBLICATIONS . . .

The New Saco-Lowell Slashing System

Saco-Lowell Shops, 147 Milk Street, Boston, Mass., have developed a new slashing system which embraces several established advanced principles for this process and some new features. These include the generous use of antifriction bearings, temperature control, stretch control, and a new double creel arrangement. One advantage cited for the new system is the production of better prepared warp yarns and loom beams for the weave room, brought about by the new system through:

Scientific preparation of sizing material;

Carefully worked out methods of cooking and conditioning the size right up to the point of its application to the yarn;

Proper and uniform penetration of sizing and uniform encasement of yarn, giving desirable protection for the weaving operation; and,

Controlled drying which gives a predetermined moisture condition in keeping with most satisfactory conditioning for the weave room. This, in addition to making for better weaving efficiency, makes possible an appreciable saving in cotton.

Other advantages cited are increased production through the use of higher speed and reduction of lost operating time; labor saving, which comes from the need of fewer units for a given production, and the use of automatic control and the new double creel which reduce the number of skilled help required; and decreased steam consumption.

One new feature of the system is the stretch control device or positive feed roll unit. The slasher is equipped with two yardage clocks arranged together at the front, or head end, of the slasher. One is driven from a measuring roll on the head end, and shows the number of slashed yards taken off. The other is driven from a measuring roll in the stretch control unit, and shows the yards fed to the size box. The difference indicates immediately the amount of stretch being taken out of the yarn. The control unit is equipped with a change gear arrangement and by slowing or speeding this gearing the amount of stretch is either increased or decreased. Once the proper gear for a desired amount of stretch is determined, the stretch remains constant from set to set or beam to beam. Surprising results have been achieved with the stretch control device on cotton, it is pointed out, by uniformly controlling the stretch at approximately 1 per cent. Natural gray yarn has a stretch of only 6 per cent to 7 per cent at the breaking load, and many cotton slashers in operation actually take out as much as 3 per cent, sufficient to weaken the yarn; and slasher speeds in many cases are limited by this factor of excessive and irregular stretch.

Warps have been made with zero stretch, it is stated, but under this condition the yarn comes off so slack it is impossible to obtain high speeds due to poor splitting at the lease bars.

The advantages summarized by the manufacturers for the stretch control device, which is also applicable to rayon work, follow:

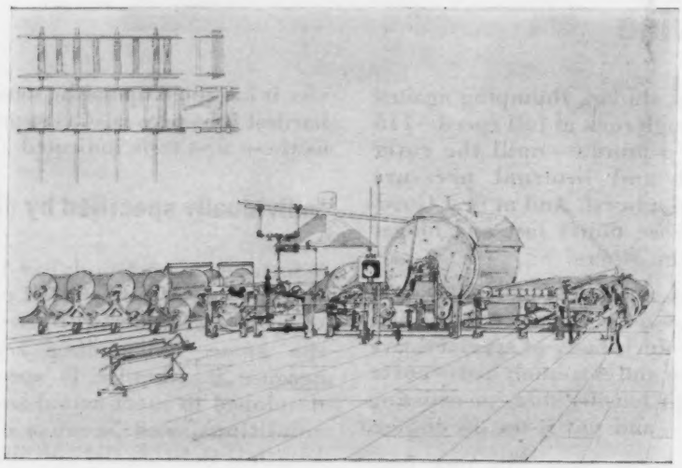
Uniformity of yarn on beams as to stretch and elasticity;

Higher slasher speeds due to this device drawing the yarn from the section beams and feeding to the slasher at a predetermined rate;

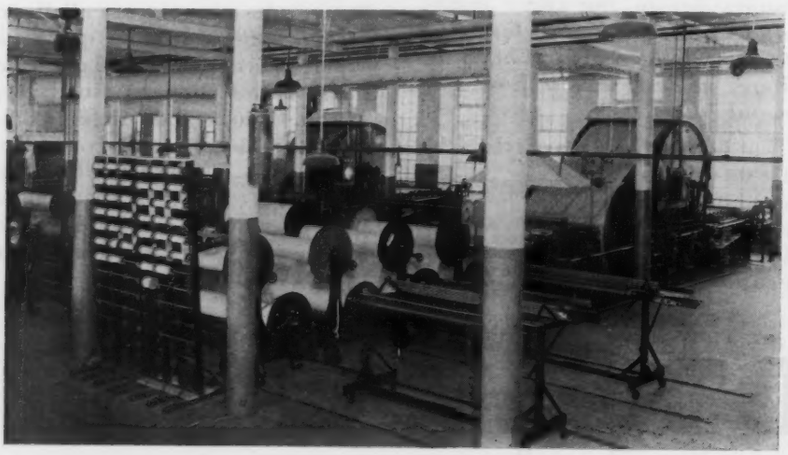
Increased weave room efficiencies due to uniform beams and the retention of stretch and elasticity in the yarn; and

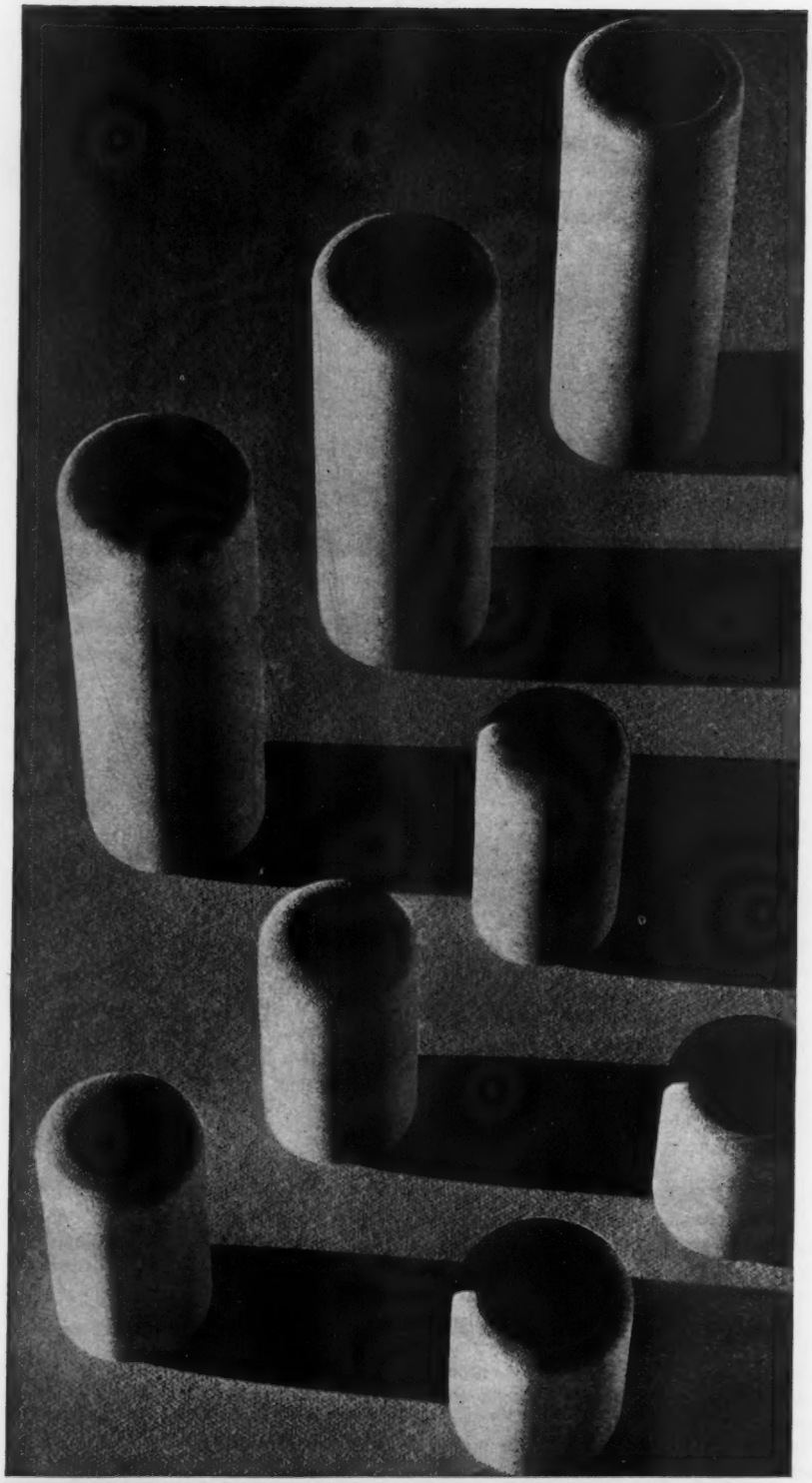
Longer life to rubber size rolls, blankets, etc. It is pointed out that without stretch control a rubber roll will groove badly in three months, while with this device the life has been well over two years, because the slippage of yarn through the rolls and the strain of drawing yarn from the beams has been eliminated.

The new system incorporates a new double-creel arrangement which contributes to higher production. Formerly it was necessary to hold a slasher out of production during the time a new set was being drawn in. In this new system this lost time is avoided by the use of two creels arranged on trucks and tracks so that either one may be placed in position to feed the slasher. Thus, while beams are being



Above and below: views of the new Saco-Lowell slashing system. Note arrangement for double creel . . . .





Armstrong's
SEAMLESS CORK COTS
for spinning and card room rolls

EACH
CORK COT IS
exactly
LIKE EVERY
OTHER ONE
!

ARMSTRONG'S Seamless Cork Cots come to you in *just one grade!*

That's because these cots are *not* unfabricated products of nature. The manufacture of Armstrong's Seamless Cork Cots is carefully controlled: the same tested ingredients are used in the same proportions time after time!

Thanks to the way Armstrong's Seamless Cork Cots are made, you are assured of better drafting. Stronger and evener yarn is produced. And there are other important advantages. Mills operating "on cork" report savings of from 50% to 75% on roll covering costs. Write today for full information and prices. Armstrong Cork Products Company, Textile Division, 923 Arch St., Lancaster, Penna.

run off to the slasher on one creel, a new set is being placed in the second creel and by means of a special drawing-in frame, the second set is laid in. When the set in the creel feeding the slasher runs out, that creel is pushed over into the alley and the other creel with a new set all laid in is brought into play behind the slasher. This of course requires a change in drawing-in practice, but, the manufacturers point out, the new method is simple, involving no new problems, and can be followed by comparatively inexperienced help.

The new slashing system was developed in co-operation with the Taylor Instrument Companies, Rochester, N. Y., and the equipment includes complete Tycos instruments for automatic control of drying temperatures on all cylinders, temperature and level controls for the size and complete temperature controls for size cooking and storage. Each installation is carefully engineered by Taylor experts who properly balance slasher room operating conditions. The Tycos system of slasher control thus consists of the proper application of indicating, recording and controlling instruments, co-ordinated with balanced operating conditions under adequate engineering supervision, and embracing every step in the slashing process from the composition of the size to the final drying of the yarn on the last cylinder of the dryer; making slashing a controlled unit of manufacture rather than a series of unrelated steps.

New Roller Covering

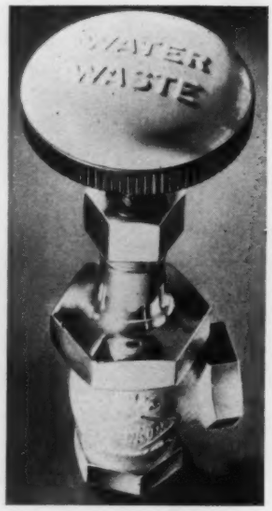
Brown Company, Portland, Maine, have developed and are introducing a new type of textile roll covering material, known as Onco textile roll covering material, which is a fabricated material, available in sheets 21x40 inches. Among the claims made for it are that it is uniform, resists abrasion, does not chip, is free from static, and results in no waste. The stretching qualities are high, it is pointed out, and for splicing, the usual isinglass glue—two parts isinglass and one part one-minute cement—is recommended. The product is made of Solka material produced under controlled conditions resulting in a material of uniform weight and thickness throughout. Mill tests indicate a minimum of licking up and lapping up of the roving around the rolls.

Portable Loader Literature

Link-Belt Company, 910 South Michigan Ave., Chicago, Ill., have issued Folder No. 1414 covering a line of portable belt conveyors for industrial plants, etc. The machines illustrated are fully described, and embody a number of recent improvements in design and construction.

Color Indexing for Valves

Jenkins Bros., 60 White St., New York City, have announced the application to valves of a new type of valve wheel which is molded of colored plastic materials. This new wheel, which was developed by Jenkins Bros. for



Color-indexed valve . . .

special use on their valves, makes it possible to designate valves for steam, water, air or any other fluids and gases by distinctive colors. Five standard colors—blue, red, black, green and gray—are offered, unmarked, and with five standard service markings molded in relief. The company also will make up wheels of special color or with special markings. This makes the wheel adaptable to use on valve-equipped apparatus.

Temp-Urd Wood Process

A new process in the joining of plastics with wood, known as Temp-Urd Wood, as developed by the Pyratone Products Corp., 309 St. Johns Court, Chicago, Ill., is of interest in connection with its possibilities in treating shuttles, bobbins, cones, etc. This process uses a synthetic resin of the phenol and formaldehyde condensation type, which, when introduced or impregnated into wood, improves several of the characteristics of wood.

It is stated that the application of the Temp-Urd Wood process to shuttles has aroused considerable interest. The vulcanized Temp-Uring material is of about the consistency of ivory, and every surface pore in the wood is filled to a considerable depth with the liquid during the impregnation before vulcanization. The end grain, where the shuttle tapers, takes more of the impregnation than the side grain, but the whole structure acquires a surface which not only makes it wear evenly but slowly. By an extra coat, the shuttle may be rendered moisture-proof. The manufacturers state that in addition to dogwood and persimmon, that maple, birch, beech, gum wood and Douglas fir and redwood take the impregnation in a satisfactory manner and acquire the same surface as the more expensive woods. From 14 to 20 per cent of the initial weight of the wood is added by impregnation, it is pointed out.

New Departure Catalog

The New Departure Manufacturing Co., Bristol, Conn., have just issued their 10th edition catalog, covering their line of ball bearings. It contains, besides complete listing of new bearing types and new sizes of existing types, many helpful features, such as tolerances and mounting fits for standard, precision and ultra-precision bearings; bearing closure data; and approved methods of bearing selection.

Underground Pipe Insulation System

H. W. Porter & Co., 825 Frelinghuysen Ave., Newark, N. J., have published a booklet describing their new Therm-o-Tile underground steam conduit system. This is a complete conduit system for the permanent protection, support, and insulation of underground pipe lines, hot or cold. The purpose of the bulletin is to show how the weaknesses of older systems have been eliminated, the work of installation simplified, and why the new system is more durable and efficient.

New Pamphlet on Hand Loom Accessories

Steel Heddle Manufacturing Co., 2100 West Allegheny Ave., Philadelphia, Pa., have just issued an attractive pamphlet covering hand loom accessories.

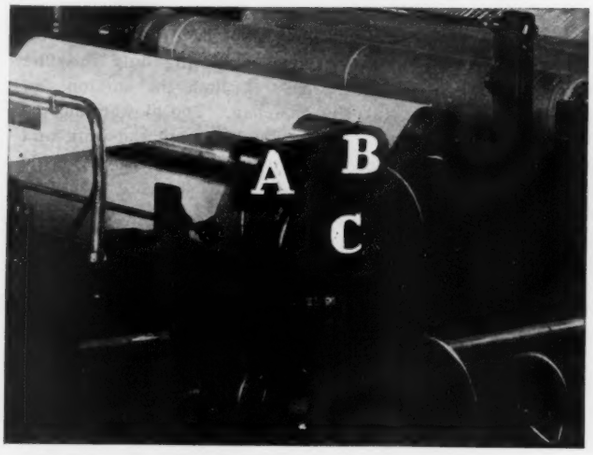
Reset Controller

Taylor Instrument Companies, Rochester, N. Y., have developed the new Taylor reset controller, an outgrowth of the so-called "differential controller" which has been used chiefly in air-conditioning work; but its potential uses are greater due to its incorporation of all of the advantages of the Taylor "Fulscope" control mechanism and its ability to be easily adjusted to meet a great variety of requirements. In general, it controls a temperature, pressure, rate of flow, or liquid level, in a predetermined relation to some other

Applicable to existing slashers

The New Saco-Lowell

Stretch-control Unit



GIVES POSITIVELY UNIFORM CONTROL OF STRETCH IN ANY AMOUNT FROM ZERO% UP

FOR EITHER COTTON OR RAYON

S-L engineers have developed (as a part of the new S-L High Speed Slasher) a Stretch-control Unit which aids in producing warp beams that give noticeably better results in the weave room. The present excessive and uneven stretching of warps, caused by slippage at the size rolls, is eliminated. Instead, the mill is enabled to produce warps of uniform stretch and with exactly the right degree of stretch to leave the yarn with maximum elasticity for weaving.

It hardly seems reasonable that the warp could slip when held between a pair of size rolls, particularly when the top roll weighs 300 to 400 pounds. Yet it does slip considerably, and this can easily be proved by stopping a slasher, gripping several hundred ends of the yarn about a foot back from the rolls, and noting how easily the yarn can be pulled right through the rolls when they are in contact.

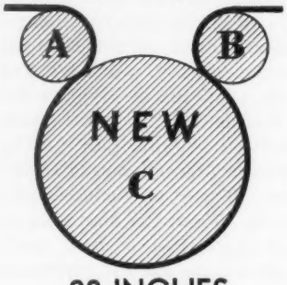
Device simple and sure

The Stretch-control Device (U. S. Patent No. 1,944,221) is simple, and positive in operation. The yarn is no longer pulled from the creel by the size rolls. Instead, this is done by the Stretch-control Unit which consists of one large and two small rolls as illustrated. The yarn has contact with 80% of the circumference of the large roll, definitely eliminating any possibility of slippage.

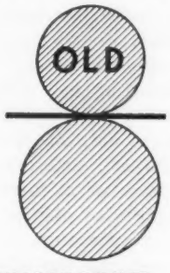
Simplicity of change gear

The relative speed of these rolls to the head end delivery roll controls the stretch. The gearing is so designed that a 100-tooth change gear gives no stretch, a 101-tooth gear 1% stretch, and so on. For most cotton goods, 1% stretch has been found ideal, for rayon 4% to 5%. Applicable to your present Saco-Lowell slashers, either cotton or rayon.

REQUEST DETAILS AND PRICE



22 INCHES OF CONTACT



SINGLE-POINT CONTACT ONLY

SACO-LOWELL SHOPS

147 Milk Street, Boston, Mass.

CHARLOTTE · ATLANTA · GREENVILLE

temperature, pressure, rate of flow, or liquid level. It can be used on all applications where a fixed differential must be maintained between two variables, one of which is under control; or where it is desirable to change the control point of a process in accordance with a predetermined ratio to a secondary process or condition.

New Book by Fidelity Machine Co.

A book of the Fidelity Machine Company, 3908 Frankford Ave., Philadelphia, being a photographic and word picture of the company's products and its service, represents an optimistic perspective for a long pull. It comprises 52 pages, of paper of the heaviness of light cardboard, 8½ by 11 inches. Coiled wire running through perforations in the 26 leaves serves as a unique sort of binding, this not indicating a loose leaf tome, however. One page is devoted to reproductions of photographs of the president of the Fidelity—H. W. Anderson—in a study pose, straight stem pipe and all, and eleven experts in the Fidelity organization who constitute the service corps. Appropriately enough, the opposite page lists the Philadelphia and New York offices and the company's eleven foreign representatives, suggestive of the Fidelity's world-wide service. The remaining pages tell in pictures and words of the company's line of knitting machines, featuring its Universal ribbers; and by liberal use of the camera, convey a very clear idea of design and construction in a variety of fifty or more long hose for children and short hose for infants, boys, misses and men, to say nothing of socks and anklets.

More than 18 months were spent in procuring and arranging photographs and reading matter in comprehensive form, with the idea of saying much about Fidelity products in few words. The printer consumed five months in completing his job. This unique specimen of art in advertising is for users and prospective users of Fidelity machinery in modernizing their plants.

Manhattan Issues New General Catalog

The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J., have produced a new 56-page general catalog covering their complete line of standard rubber products for industry. It is attractively printed in two colors, and bound in a combination cover and file jacket. It describes the company's lines of belting, hose, fittings, packing, friction material, molded goods, sundries, specialties, matting and tread, rubber covered rolls and tanks, abrasive wheels, etc.

New Bristol Flow Meter

The Bristol Company, Waterbury, Conn., have developed a new flow meter embodying the orifice and mercury manometer system of flow measurement. The meter body is of forged steel. Uniform areas of cross-section in the mercury chambers contribute to accuracy and interchangeability, it is pointed out. A long float lever arm connecting the large powerful float to the pen arm assures both hair-line sensitivity without jumping and sustained accuracy. Connections are welded or mechanical. Parts are counter-balanced. Working parts permit cleaning without danger of disturbing calibration. The hardened stainless steel stuffing box is lapped to the shaft.

Different ranges of operation are made possible by changing either the size of the orifice, the high pressure leg of the manometer, or both. The integrator is positive in action, and is so designed as to eliminate need for friction contacts and clutches. Check valves, operating by gravity, are used to prevent the loss of mercury.

"Modern Box Design" by Hinde & Dauch

The Hinde & Dauch Paper Co., Sandusky, Ohio, has just published a new book, "Modern Box Design", which deals with the outward appearance of corrugated fiber shipping boxes. The book presents the subject of shipping box design in an unusual manner. Descriptive copy is brief, and numerous photographs serve to illustrate the various points discussed.

Bulletin on "Tong Test" Ammeter

The Columbia Electric Manufacturing Co., 4519 Hamilton Ave., Cleveland, Ohio, have issued a circular describing the Crompton "Tong Test" ammeter, for measuring a.c. and d.c. current. In its use, there is no interruption to current flow, and it may be operated with one hand. The tongs of the instrument are placed around the conductor carrying the current to be measured, and the reading is taken directly without breaking the circuit, without temporary cables or connecting up. The instrument weighs only 2¾ pounds. It will, the bulletin points out, measure current in all lines, thereby determining the current balance in a three-wire system; determine load distribution of transformers or generators operated in parallel; determine the load on transmission lines or feeders; check loads on switches, fuses, motors, transformers and generators; measure starting currents; locate open phases; measure current in individual brushes on one common brush-holder stud; etc., etc.

Mill Type Vacuum Cleaner

The Martindale Electric Co., Box 2069, Lakewood Branch, Cleveland, Ohio, have announced a new mill-type vacuum cleaner, weighing only 40 pounds, and adapted to industrial cleaning requirements. The vacuum (46-inch water column) is obtained by the blower, mounted on a 12-gallon steel tank equipped with a large dust bag. All heavy particles including the heavier dust and dirt drop directly into the tank, permitting only the fine dust to pass through the suction fan into the dust bag. The blower may be readily dismounted from the tank and used as a portable blower. A wide range of suction attachments are available.

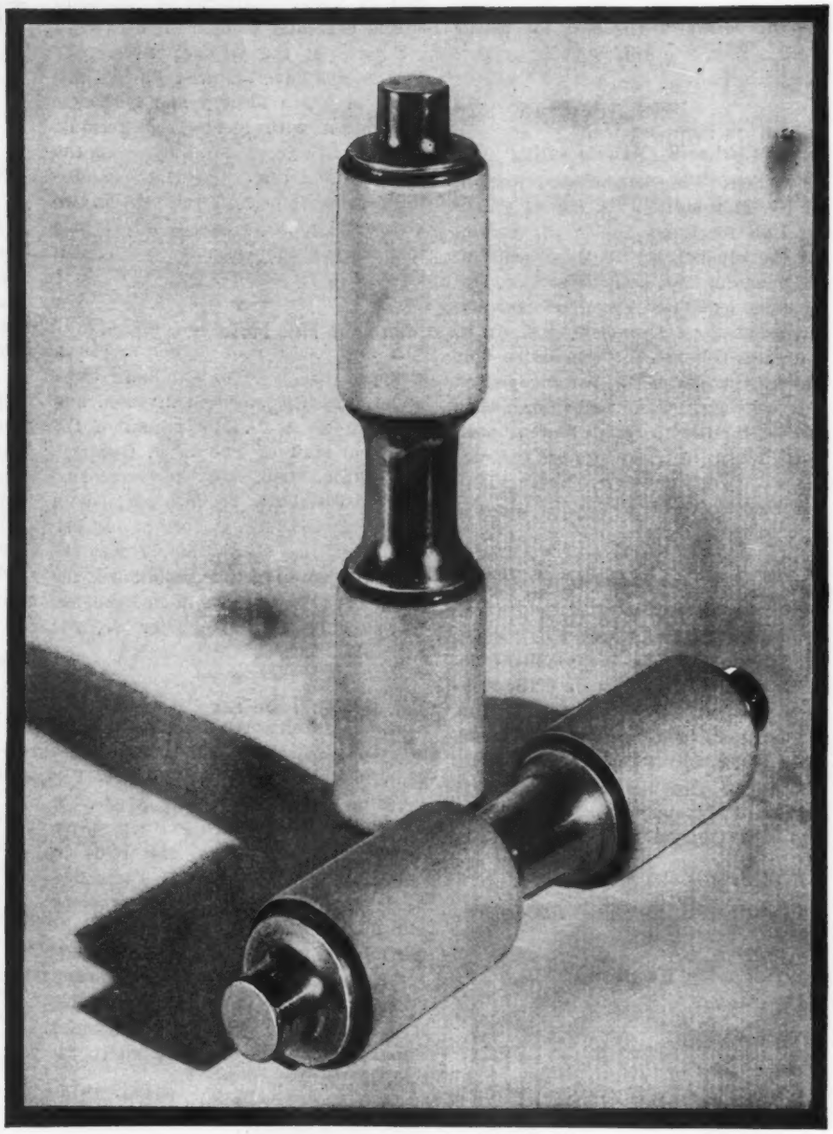
New Diaphragm Valve

C. J. Tagliabue Mfg. Co., Park and Nostrand Aves., Brooklyn, N. Y., have announced a new valve development—a new long range throttling top with several new design features. In the arrangement for adjusting the spring pressure, the member in contact with the bottom of the spring does not turn when the adjusting feed screw is turned, but, guided by the two vertical fins of the spider arms, merely moves up or down. This spring adjustment does not tend to wind up the spring or disturb its normal characteristic in any way, it is explained. The company's line of valves is described in Bulletin No. 1117.

Facts on Power Transmission

Graton & Knight Company, 356 Franklin Street, Worcester, Mass., have issued through its research department a complete economic study of the application of power to the work. It discusses fully the two generally used systems—individual motor and modern group drive. The book is a graphic, 44-page presentation. The necessary facts and figures have been made readable and interesting by the liberal use of drawings and illustrative material. Some of the headings of discussions are: "Two Ways You Can Spend Your Income Dollars for Power Transmission"; "Investment Cost for Motors"; "Power Cost"; "Why Planned Power Transmission is Important During Times of Reduced Production"; etc. From the discussion of the proper application of both group and unit drives, the story is carried on to show the importance of the selection of the proper belt to give the best efficiency to the correct drive. The last

Excellence in Spinning Results with SPINNA CALF



SPINNA CALF continues to make a reputation for itself in the spinning of smooth, even yarns, especially where quality of production is the goal.

A. C. LAWRENCE LEATHER CO.

Specialists in Textile Leathers

BOSTON, MASS. PEABODY, MASS. GREENVILLE, S. C.

Fabric *Quality* begins with the *Yarn*

few pages contain charts and tables that are useful in figuring the power transmission requirements of any particular machine.

Leaflet on Pumping Unit

Allis-Chalmers Manufacturing Co., Milwaukee, Wis., have issued Pamphlet No. 2199 entitled "A Useful Pumping Unit for Every Industry", describing the company's SSU Type centrifugal pumping unit, a single suction, single stage pump and a squirrel cage motor designed as a complete unit. In it, one shaft is used for the entire unit which is supported by two amply-sized ball bearings. The discharge muzzle can be rotated to four different positions. Wearing rings protect the casing and cover from wear. Every pumping unit is tested for head, capacity, and efficiency after assembly, it is stated.

Development of the Banner Wrap Stripe

A development in the seamless hosiery knitting art which is claimed to enable knitting machines to approach the Jacquard loom in patterning versatility is seen in the Banner wrap stripe attachment for application to plain Banner and Banner 12-step machines. Hemphill Company, Pawtucket, R. I., are making the attachment with six

Cravat purchased from Weber and Heilbronner window with half hose in matching pattern knit on Banner 12-step machine with Banner wrap stripe attachment . . . . . .

steps and twelve colors for application to low cylinder plain Banner and Banner 12-step machines, and with eight steps and twelve colors for the high cylinder machines of both types. At the same time the Banner horizontal striper attachment can be applied to the machines to permit the reproduction in hosiery patterns of the plaid effects currently popular in neckwear.

Several of the Wallach Bros. New York stores have featured window displays in which hosiery and neckwear are shown with identical patterning. As there is a general feeling among the retailers that this is good merchandising because it permits the sale of two articles in place of one, it is probable that more of this ensemble styling will be seen in the future.

Improved Fire Hose

A new method of laying fabric in wrapped fire hose to eliminate twist under pressure has been invented and patented by A. D. Maclachlan of the technical staff of The B. F. Goodrich Co., Akron, Ohio. The new construction feature will be incorporated in White Anchor bias-laid fire hose. The fact that the hose remains straight when pressure is applied minimizes the danger of a "wild" hose in emergencies, and simplifies rewinding after use, it is explained.

Bulletins on Tube-Tex

H. W. Butterworth & Sons Co., Philadelphia, Pa., have issued three new bulletins descriptive of the Tube-Tex machine for tubular knit goods, "a modern machine which extracts, processes, dries, conditions, and folds in one continuous operation". These machines handle cotton, rayon, woolens and mixtures at speeds up to 45 yards per minute, and are unique in that patterns, designs and strips are finished straight and free from any distortions, it is explained. Standard machines handle all widths of fabric up to 34-inch tubes.

New Duck Harness

Steel Heddle Manufacturing Co., 2100 West Allegheny Ave., Philadelphia, Pa., have announced a new frame for use in weaving duck. The frame is exceptionally strong and rigid, it is stated, and is made with patented double end braces bolted to selected hardwood. Another feature is the increased size tempered steel heddle bar, which is held with Stehedco patented lock hooks for not only holding the heddle bar securely, but also permitting a quick and easy release when desired.

"Blue Book of Packaging"

The Gerrard Company, 915 West 47th St., Chicago, Ill., are distributing the new "Gerrard Blue Book of Packaging", which discusses the company's equipment for wire tying on different types of containers, and describes different applications, including the packaging of textile products.

TIMELY NEWS ITEMS WITH A TEXTILE SLANT

Standard-Coosa-Thatcher Appoints N. Y. Representatives

Standard-Coosa-Thatcher Company, manufacturers of mercerized yarns, with sales offices in Philadelphia, and plants at Chattanooga, Tenn., Rossville, Ga., and Piedmont, Ala., have announced the appointment of Boswell & Davidson, Inc., Cohoes, N. Y., as sole representative in New York State for the sale of their product of combed and carded knitting yarns, Durene and sewing threads. The sales work in the field will be in charge of Elias Van O'Linda, who has been identified with the textile business in New York State for some time and is well known in the trade.

Kennedy Represents Industrial Dryer Co.

W. A. Kennedy Company, Charlotte, N. C., have been appointed southern representatives of the Industrial Dryer Corporation, Stamford, Conn., manufacturers of "H-W" conditioners and mullers. This concern recently announced the installation of their rayon conditioners for Plant No. 6 of Burlington Mills Co., Burlington, N. C., Cascade Rayon Mills, Inc., Mooresville, N. C., and an H-W conditioner for setting twist at the Pilot Full-Fashioned Mills, Valdese, N. C.

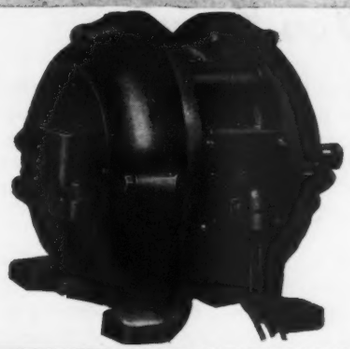
U S Bobbin & Shuttle Appoint Canadian Representative

W. J. Westaway Company, Ltd., Hamilton, Ontario, Canada, with branch offices in Montreal and Toronto, has been appointed Canadian representative of the U S Bobbin & Shuttle Company of Manchester, N. H. The Westaway organization, which has had a broad experience in the textile machinery and supply business, will carry a complete line of U S textile products which include bobbins, shuttles, quills, cones and spools. It embraces the U S Jackson tension shuttle and the U S Unit tension shuttle for the silk and rayon weaving trades, etc.

Houghton Promotes Carpenter

E. F. Houghton & Company, manufacturers of oils and leathers, Philadelphia, Pa., have announced the election of E. A. Carpenter as secretary of the company to fill the vacancy caused by the recent death of A. Everly Carpenter, III.

REDUCE WEAVING COSTS



G-E loom motor with waste-packed bearings. Large-capacity oil reservoirs reduce the frequency of fillings and cut the cost of maintenance

WITH THE G-E LOOM MOTOR

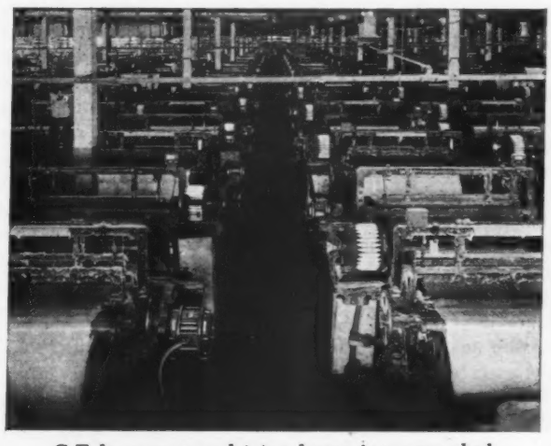
G-E starting switch for loom motor, mounted on pedestal; cover closed

BY installing General Electric loom motors in your weave shed, you can obtain for your mill important operating economies that will cut your weaving costs and help you build profits.

The General Electric loom motor is built with the sturdy construction necessary for successful performance with modern high-speed looms. Because of its superior design and the high quality of its materials and workmanship, it offers mill operators the following major advantages:

1. **Exceptionally low power consumption,** which reduces operating costs.
2. **Sustained high speed,** which maintains maximum production under varying load conditions.
3. **Ample reserve capacity** for breaking in new looms.
4. **Positive lubrication with infrequent oiling** because these motors are equipped with trouble-free, waste-packed bearings and large-capacity oil reservoirs. Wool-yarn packing can be easily inspected or renewed without disturbing motor bearings or mounting.
5. **Exceptionally long life,** with low maintenance.

Get these cost-reducing, profit-building advantages for your mill. Investigate, also, G-E control, switchgear, power-generating apparatus, wire and cable, and other products which General Electric makes for the textile industry. An experienced sales engineer in the G-E office nearest you will be glad to help you solve your electrical problems efficiently and economically. Why not get in touch with him? General Electric, Schenectady, N. Y.



G-E loom motors driving looms in weave shed of a large southern textile mill

020-141

GENERAL ELECTRIC

PERSONAL NOTES
about Men You Know

Fred Howe, Jr., Succeeds Syd Alexander for C. & K.

Announcement is made by Crompton & Knowles Loom Works that its office will be continued at the corner of South Cedar and West Third Streets, Charlotte, N. C. FREDERICK W. HOWE, JR., heretofore connected with the company's main office, has been assigned to Charlotte as successor to the late S. B. ALEXANDER, who for 28 years was its southern representative. Mr. Howe is is a son of the late FREDERICK W. HOWE, SR., vice-president of Crompton & Knowles Loom Works.

W. A. REID, formerly manager of the Pelham, Ga., plant of Consolidated Textile Corporation, has become superintendent of the Gate City Cotton Mills, College, Park, Ga., succeeding D. E. MCGLOUN, resigned.

H. M. MILES, formerly superintendent of carding and spinning at Cherokee Spinning Company, Knoxville, Tenn., has become overseer of carding at the spinning mill of Dixie Mercerizing Company, at Chattanooga, Tenn.

GEORGE S. ELLIOTT has become treasurer and general manager of the Dallas Manufacturing Company, Huntsville. Ala., succeeding H. M. RHETT. Mr. Elliott has been plant manager and superintendent of Pacolet Mfg. Company No. 4, New Holland, Ga. MARSHALL C. STONE, who has been superintendent of the Arkwright Mills, Spartanburg, S. C., and who was previously assistant superintendent at New Holland, succeeds Mr. Elliott at the Georgia plant.

YATES SMITH has been transferred from treasurer of the Whitney Manufacturing Co., Whitney, S. C., to treasurer of the Gainesville Cotton Mills, Gainesville, Ga. V. M. MONTGOMERY, JR., who has been treasurer at Gainesville, succeeds Mr. Smith at Whitney.

T. B. MOORE has become general superintendent of the Pickett and High Point Yarn Mills, High Point, N. C. Mr. Moore had been superintendent of the Dixie Mercerizing Company's spinning plant at Chattanooga, Tenn., until several months ago.

JOHN A. MCFALLS, superintendent of Entwistle Mfg. Company's plant No. 2 at Rockingham, N. C., has been promoted to general superintendent of this mill and Plant No. 3. In the latter position he succeeds the late S. S. STEELE. Mr. McFalls was elected president of the Southern Textile Association last month.

J. W. MCELHANNON has resigned as superintendent of the Eagle & Phenix Mills, Columbus, Ga., to become general manager of the plants of Waverly Mills, Inc., Laurinburg, N. C. H. L. DILLARD has succeeded Mr. McElhannon at Eagle & Phenix.

PAUL W. MARCEAU, formerly field engineer for the Johnson Bronze Company, New Castle, Pa., has been made general manager of the Moccasin Bushing Company, Chattanooga, Tenn., manufacturers of oil distributing bushings and bronze castings. Mr. Marceau is well known among the textile mills in connection with his work in that field with the products of the Johnson Bronze Company.

Mr. Marceau

JOHN A. (DOC) HARRIS is now in charge of the North Carolina territory for Staley Sales Corporation, with headquarters in Greensboro, N. C. Mr. Harris, who succeeds LEROY SMITH, was for a number of years representative of the company in the Alabama-Mississippi territory, where H. A. (HANK) MITCHELL is now representative. These territories are under the supervision of W. H. RANDOLPH, JR., southern sales manager, with headquarters in Atlanta, Ga.

ROBERT A. MORGAN has become associated as textile engineer with Moore & Thies, textile cost engineers, successors to the firm of Rhyne, Moore & Thies. The activities of the firm will be extended to embrace all problems of manufacturing, such as balancing of machinery units, selection and arrangement of fabrics, machinery tests, and labor efficiency.

W. GAINES HUGULEY, JR., formerly second hand in spinning at the Columbus Manufacturing Co., Columbus, Ga., has become overseer of spinning at the Eagle & Phenix Mills, Columbus, Ga.

DONALD BARNES, of Uxbridge, has been made superintendent of the plants of Uxbridge Worsted Company, in the South. This company recently acquired the Adams-Swirles Cotton Mills at Macon, Ga., and the Standard Cotton Mills at Cedartown, Ga.

G. W. GURLEY, overseer of carding in Mill No. 3, Rosemary Manufacturing Company, Rosemary, N. C., has been made overseer of carding also for Mills No. 1 and No. 2, succeeding the late M. R. VICK.

CARL M. MOORE recently resigned as superintendent of the Piedmont Manufacturing Company, Piedmont, S. C., after holding this position for several years. His permanent successor had not been named at this writing. Mr. Moore previously was agent for the West Boylston Manufacturing Company, Montgomery, Ala.

Obituary

D. A. JEWELL, SR., president of the Crystal Springs Bleachery, Chickamauga, Ga., passed away on July 2, following a brief illness, as the result of a heart attack.

W. R. B. WHITTIER, 68, treasurer of the Whittier Mills, Chattahoochee, Ga., and of the Silver Lake Company of Massachusetts and the Lawrence Mfg. Company, Lowell, Mass., passed away recently at his home in Chattahoochee. He was a native of Chicopee, Mass., and had resided in Georgia for more than 40 years.

S. S STEELE, superintendent of Mill No 3, Entwistle Mfg. Co., Rockingham, N. C., passed away on May 27 at 59 years of age, following a heart attack. He is survived by Mrs. Steele and two children.

E. M. TERRYBERRY, one of the pioneer salesmen calling on the textile mills of the South, general sales agent for Howard Brothers Manufacturing Company, of Worcester, Mass., passed away on June 5 at his home in Washington, D. C., at 67 years of age. He had been in failing health for several months, and his death came as the result of a heart attack. Mr. Terryberry had been with Howard Brothers for more than 20 years, and no man among the textile traveling fraternity was more widely known and loved and respected. Funeral services were held in Washington on June 7. Mrs. Terryberry and four daughters survive him.

Automatic Spooling
ELIMINATES the use of *Hand Knotters...*

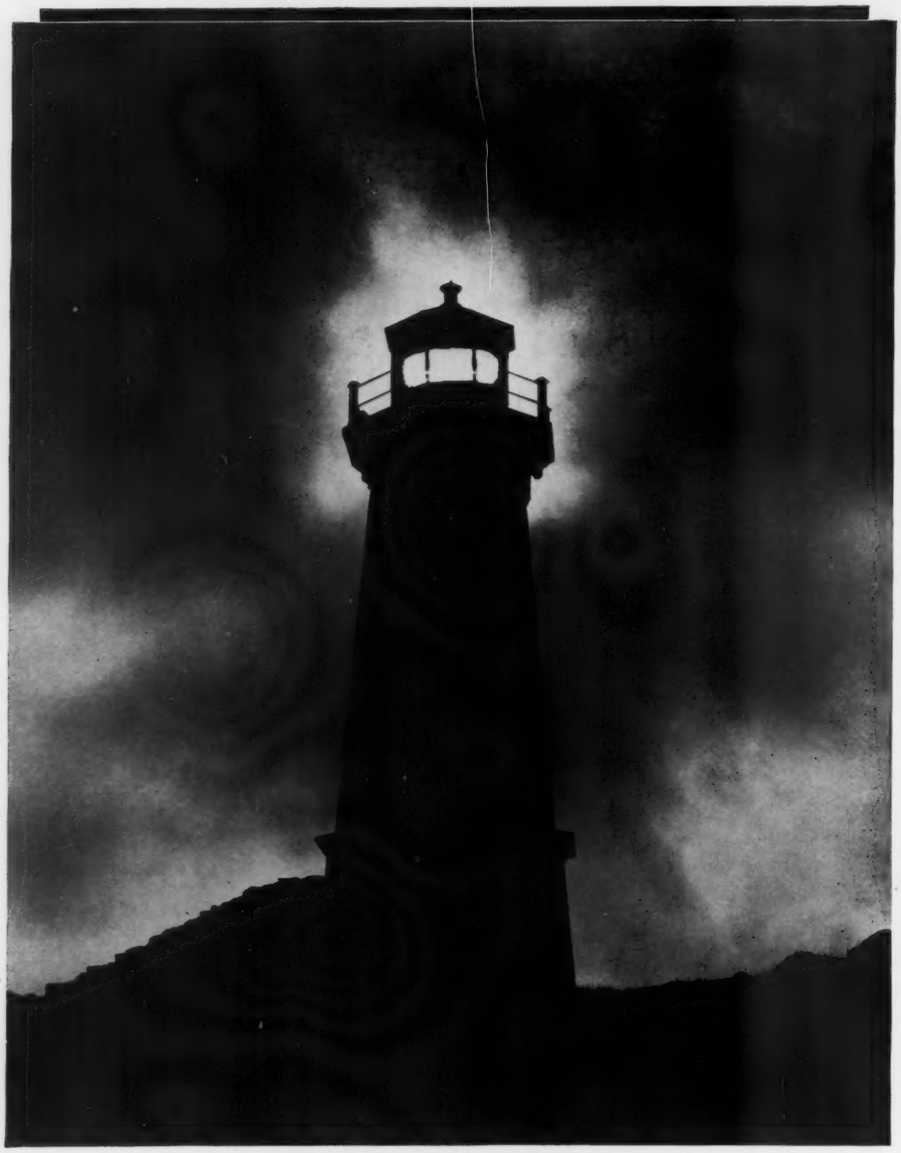
In Order to Reduce Spooling Costs,

the rate at which operators handle bobbins must be increased. All other spooling and winding systems use hand knotters; therefore, the work required is essentially the same and little if any decrease in costs can be obtained.

THE *AUTOMATIC SPOOLER*

mechanically finds ends, ties weaver's knots, controls slack while tying, and starts the yarn package winding. This enables the operators to handle many more bobbins per minute and results in large reductions in spooling costs.

Automatic Spooling...
is EXCLUSIVELY *a part of*
The BARBER-COLMAN *System*
of Spooling and *Warping*



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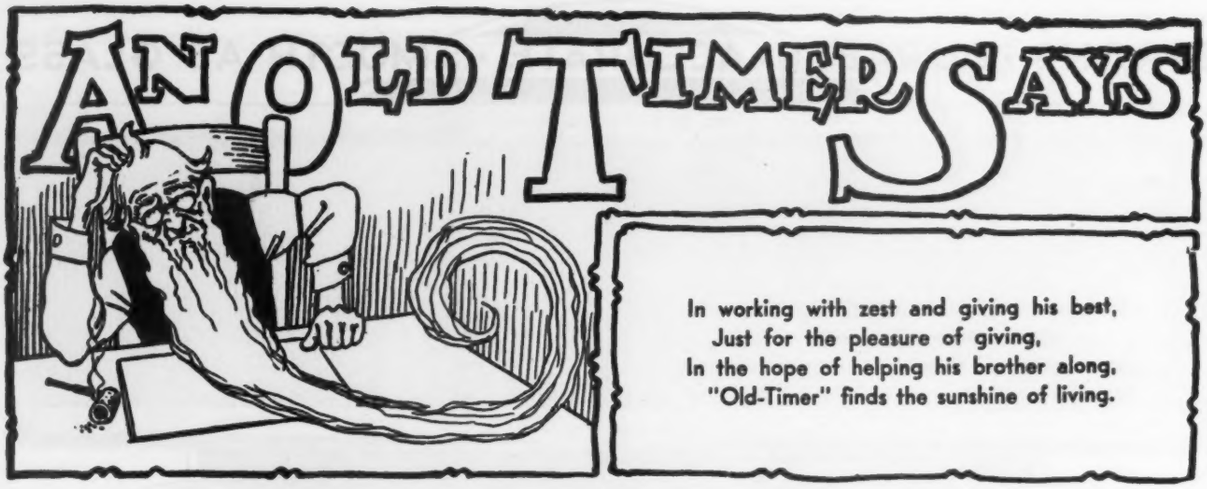
AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

Thoughts at a Wrestling Match

GOSH, fellows, that was some wrestling match! Those fellows wrestled—they did not put on one of those "rough house" shows that they tell me are all framed up as to which one is going to win. These men looked to me like they were scientific wrestlers and I enjoyed the evening very much.

When one of the wrestlers came into the ring and took off his robe—there stood before us as fine a specimen of manhood as I have seen in a long time. I thought—well, he must be equal in physique to the Greek gods we read about.

I was sitting there musing to myself along those lines when the stranger at my side said, "You can see that man is strong—not just brute strength, but speed and skillfulness with it."

The other wrestler entered the ring—the referee was talking to him—the bell rang and they were off.

For some time my mind was occupied only in watching the performance of skill, strength and knowledge of the different holds and advantages in wrestling.

Then the statement of my friend, the stranger, who sat beside me, came back as if he had made the statement again: "You can *see* that man is strong, etc."

Yes, you could *see* that man was strong, and wouldn't it be wonderful if you could *see* whether a man was dependable or not.

Whether he was really loyal or not.

Whether he was really honest or not.

Whether he had good judgment or not.

Whether he was a good pupil or not. And what I mean by a good pupil is whether he would take the teachings of his superior officer or not. Whether he would take his employer's ideas and try to carry them out as if they were his ideas.

Or whether he would go to the men under him with an order and leave the impression that it was necessary for him to carry out the old man's ideas but (without saying so) he did not think it was so hot.

Whether he would run the job like it "belonged to him" or not—

Darned if it doesn't look like he is going to break that fellow's arm—he has had that hold, it seems to me, an hour (probably three or four minutes). Look! his hand is perfectly white—the blood circulation is cut off—his face looks like he is in terrible pain. Now he is trying again to break loose. Come on, fellow, pull just a little harder—turn him over—

Pardon me, but are you trying to wrestle, too, or did you come here to see the other fellows wrestle?

Sorry, I'm sure—I did not realize I was pushing against you so hard—and I felt like a fool. Anyhow, he broke it.

O, yes! I started out to give you this thought: It would never do to be able to just look at a man and know all about him like my side partner here could look at the wrestler and know he was strong, skillful, etc. No, that would never do—that would spoil all the study of human nature—then one fellow could pick out men just about as well as anyone else—that would eliminate most of the competition between men whose job it is to pick men for positions such as superintendents, overseers, second hands, section men, etc.

Wasn't it Napoleon who said if it wasn't for his ability to pick men for his lieutenants, captains, gen-

Important Announcement!

IN an effort to be of more service, Old-Timer has secured an additional supply of the attractive and helpful souvenir portraying the Old-Timer slogan, first offered in March 1931, in organizing the Old-Timer Club. The club has been more successful than we ever anticipated. In addition to mill men, many other people including insurance firms, radio manufacturers, merchants, etc., have asked for the souvenir to use at sales conventions, etc.

These souvenirs will be presented free upon request to readers who ask for them and who will meet the requirements. There is no catch in this. We know the slogan will make you a better man, and put dollars in your pocket if you will conscientiously follow it.

If you are interested, write to Old-Timer, care of COTTON, Grant Bldg., Atlanta, and ask for a souvenir of the Old-Timer Club.

STRONG • DURABLE • ACCURATE • SMOOTH AS GLASS

Unusual Flexibility and super smoothness of the dents, together with proper proportioning of metal and air space assures a great reduction in seconds and loom stops.

The STEHEDCO Pitch Band Reed is specially designed and made for Cotton, Worsted, Wool, and Rayon weaving—in regular and oval dent wire—any desired count. Ask our representative to show you a sample of the reed best suited to the fabric you contemplate weaving.

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Let us co-operate with you in selecting the most efficient reed for the weaving of the particular cloth you contemplate making. It will have a very important bearing on the quality of the fabric woven. No obligation attached to this service.

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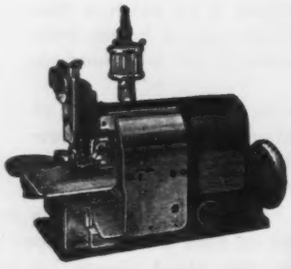

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FOR USE IN THE FABRICATION OF KNITTED AND WOVEN GOODS OF ALL KINDS.

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PRODUCING A FLAT BUTTED SEAM (AS ILLUSTRATED BELOW) TO FACILITATE SUBSEQUENT PROCESSING OF TEXTILES

FINISHERS REPORT DEFINITE SAVINGS BOTH IN LABOR AND FABRIC. LET US DEMONSTRATE WORK OF THESE MACHINES ON YOUR OWN PRODUCT.

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STANDARD RING TRAVELERS

BEST MEET THE SPECIFIC REQUIREMENTS FOR SPINNING AND TWISTING

THE BOWEN PATENTED BEVEL EDGE TRAVELER
VERTICAL OFFSET TRAVELER
FOR
EVEN SPINNING AND TWISTING
VERTICAL NE-BOW TRAVELER
FOR
SILK, RAYON AND FINE WORSTED YARNS. A TRAVELER THAT WILL NOT UNTHREAD. ESPECIALLY DESIGNED FOR LUBRICATING RINGS.

Write For Samples and Particulars

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PROVIDENCE, R. I. GREENVILLE, S. C.
AMOS M. BOWEN
Pres. and Treas.
Southern Sales Representatives
Wm. P. Vaughan, Greenville, S. C.
Oliver B. Land, Athens, Georgia
Torrence L. Maynard, Belmont, N. C.

"A TRAVELER FOR EVERY FIBRE"

erals, etc., all his wonderful strategy as a warrior would come to nothing? I wonder how many overseers and superintendents realize that fact—that their success depends largely on their ability to pick and train men. I've seen a lot of successful overseers and superintendents who seemed to swell up with the thought that I am the most successful overseer or superintendent in this section—I am running this job better than anyone else has ever run it—I am this and I am that.

Poor fool—he will wake up some of these days and realize he is not the whole cheese.

But there are ways—yes, many ways—to find out about what kind of material a man is made of. In fact it would take a very large book to record them. Most men really form their opinions of other men by instinct—or rather their opinion comes from their subconscious minds, which are the storehouse of experiences.

I really think that one of the surest ways to know what there is in a man is to watch how he acts when he has done something wrong and realizes it.

Matters not how fine a fellow he is when everything is going O. K. Matters not how courageous he is or how shrewd—just watch him when he has "slipped". See how he reacts when he wakes up to the fact that he has actually made a mistake that is going to cost his employer money.

Watch to see how he will begin to plan his line of procedure when he knows the boss will call him on the carpet. What is the first thing he says when he is caught in a "jam"?

Suppose he has done something that is going to cause his fellow worker, his brother overseer or superintendent, to get called down when he knows deep down in his own heart that he himself is the only one to blame. Is he going to come forward like a man and take it or do you see him begin to try to cover up?

Of course I am not referring to one of those smart guys who can never be wrong. Everyone knows his game. I am talking about the fellow you have formed a pretty good opinion of—a fellow you have decided is pretty square.

Then, after the matter has been cleared up—

Ouch, Mister! That's my leg you're squeezing.

Pardon me, I thought he had him that time, didn't you? (I came very near asking him the same question he asked me; but he seemed to be a pretty husky chap so I let it pass.)

Then, after the matter has been cleared up, how does he act? Does he try to make amends for the wrong he has done or is he sore at everybody including those who had absolutely nothing to do with it?

The man who carries or nurses grudges and grievances never yet has profited by it. And the strange fact is that you can ask a man who does carry grudges if he thinks a man gains anything by it, and I have never seen one yet but who can explain to you all the different kinds of fool a man is who will carry a grudge—and then go right on holding a grudge against someone in his own organization that he should be co-operating with if he is as loyal to his employer as he knows he should be.

Just one of those strange freaks of human nature. In fact, I know one man (who in all probability will read this article) who has a grudge against a man in the same organization. He of course thinks he is justified in holding this grudge—in fact, he just *knows* he is justified because that fellow has done this and that and the other thing, etc.

If I should tell this man that he was not loyal to his employer, he would resent the statement emphatically, and if I should push my argument I suspect that he would get mad. On the other hand, if I explained a similar case to him of some friend of mine in another organization, he would agree with me that to hold a grudge against anyone in the same organization was not being loyal to one's employer.

Some more strange human nature.

Good wrestling match, fellows—you ought to go to one some time.

When Is a Penetrant Not a Penetrant?

(Continued from page 51.)

cialty can correct but such cases are special pleadings and come under the heading of unusual examples which are usually recognized for what they are when they occur.

Take the dyeing of vat colors for example on tightly twisted goods. Such colors are difficult dyes to coax through a tightly twisted fiber and it might be thought that here is an ideal time to use a penetrant, but I think that most dyers will agree that in such a case that what they rely on most is an addition of extra caustic to the dye bath, also an addition of a dye slowing reagent, such as glue or the like and finally a rise in temperature.

Caustic soda most certainly is not a penetrant and neither is glue, yet the combination of these two chemicals achieves a satisfactory penetration of the goods and here we have an example where penetration has been achieved not by a penetrant but by reducing the speed at which the dye exhausts—an entirely different thing—and it could well be that some of the criticism which has been directed against penetrants as being nostrums may have arisen through a confusion in nomenclature whereby a product which had excellent powers of reducing the speed at which a dye exhausts thereby enabling the mechanical circulation plus time to produce penetration, was styled a penetrant, whereas in the strict meaning of the word it was anything but a penetrant.

It could well be that the makers of these excellent and helpful products could perform a service to the dyers in the matter of classification. Really what a dyer wants is this: Does the product only wet out? Has it grease removing properties? Or, does it markedly slow off the speed of dye exhaustion?

Such a system of classification might be of some little assistance, but yet I know that it is utterly incomplete. I feel sure that somewhere there is a dyehouse operating on greasy stock without scouring and relying on a gradual raising of the temperature to gradually remove the grease and at the same time to allow the dye to go on. Which, if you can do it, is a very fine method of combining wetting out, grease removal, and controlling the rate of dye exhaustion.

This Individual Service Can Solve YOUR Problem, Too!

The NORTH service, which we have been rendering to the mills for the past several years, consists of sending practical men to mills upon request, to completely and thoroughly investigate methods and systems of sizing, including the making of laboratory tests on raw cotton, unsized and sized warp yarn and on cloth, giving moisture content, dry size and other conditions made necessary in order to comply with strict present-day specifications for all textile fabrics. Suggestions will then be made by our practical mill men and experienced textile chemists.

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We have made broad claims for the mechanical perfection of Moccasin Bushings and have yet to report our first failure.
They require the oiler's attention but a few times a year. They insure every drop of oil reaching the desired spot—the bearing. Nothing but clean oil can reach the bearing surface.
And finally—
Moccasin Bushings are *guaranteed* to give the fullest satisfaction in your most *troublesome bearings.*
We have an interesting booklet that gives sound reasons for standardizing on Moccasin Bushings.

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Makers of Brass and Bronze Castings of Every Description

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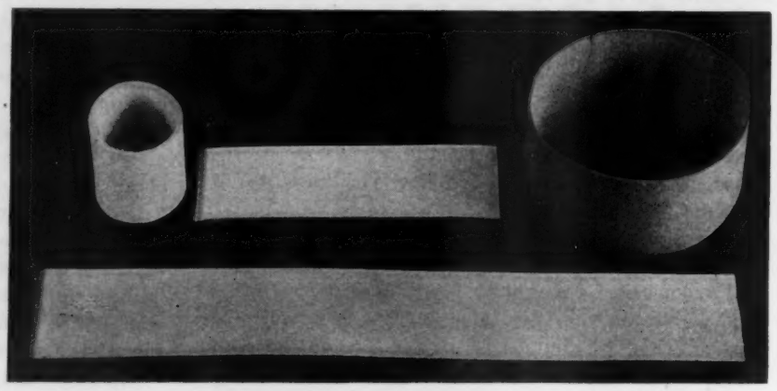

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QUALITY SERVICE

HOW OTHER MEN MANAGE

Practical Discussions by Cotton's Readers On all Varieties of Mill Subjects

DRAFT--by Fay H. Martin

THIS article on Draft begins a series of four discussions by Mr. Martin which will cover Draft, Twist, Lay and Tension, with particular reference to the roving frame. We believe they will constitute a distinct contribution to up-to-date, useful literature on these important principles of cotton manufacturing. They have been written in the clearest of terms, so that they are understandable to the novice; but the experienced mill man will as well find much of fundamental value and clarity in them.

Mr. Martin

Mr. Martin, the author, has spent a life-time in connection with the design and manufacture of textile machinery; and is generally recognized as an authority in the industry on the subject of roving frames and other mill machinery.

We earnestly suggest to each reader that he clip or file the individual copies of the articles in this series for permanent future reference.—The Editor.

DRAFT—What is it?

The dictionary says:

"The act of drawing, or the fact of being drawn; also, that which is drawn or to be drawn, or its weight or resistance; a haul; pull; drag; a load.

Also Attenuate, to make thin, small or fine; draw out, as a wire."

As a matter of fact, all cotton, while in process, is in a state of attenuation from the picker to the spinning frame inclusive.

On a picker, we will say, a yard weighs 12 ounces; then after passing through all of the machines, this yard from the picker is drawn out until one yard of No. 50s yarn weighs only 0.166 grains or .1/6 of a grain, a reduction from 12 ounces per yard which equals 5,250 grains, to 1/6 of a grain for a yard of 50s yarn. But the yard from the picker makes very many yards of 50s yarn. So you see that draft plays a very important part in a cotton mill. We, however, will cite only one example using 7 x 3½ "Woonsocket" roving frame for that, but the principle applies to all machines that cotton passes through in the making of yarn.

We will assume that you are more or less familiar with cotton machinery and with a roving frame in particular.

In looking at the cut you will see a lay-out or diagram of the draft gearing of a roving frame; the gearing as it is connected together is called a "train of gears" and this word "train" will be used throughout this article.

Draft is brought about by revolving the back roller slower than the front roller is revolving. The front roller is at a constant speed consistent with the hank roving being made, thus the front roller is the driver of the draft gearing train.

The cotton enters at the back of a set of rollers and is delivered at the front. The number of inches delivered at the front divided by the number of inches entering at the back equals the draft. In other words, the *surface* speed of the front roll (of whatever diameter) divided by the *surface* speed of the back roll equals the draft.

To illustrate: The front roll is 1⅛-inch diameter, revolving at 100 r.p.m., we will say. Then with the following train of gearing (see Fig. 1) in which

A—Back roll gear	56 teeth
B—Crown gear	100 teeth
C—Front roll pinion (Drives crown gear)	35 teeth
CH—Draft change gear	30 teeth
FR—Diameter front roll	1⅛"
BR—Diameter back roll	1"

With this set-up we find that the surface speed of the front roll is 353.43 inches per minute, which is 3.5343-inch circumference of 1⅛-inch front roll mul-

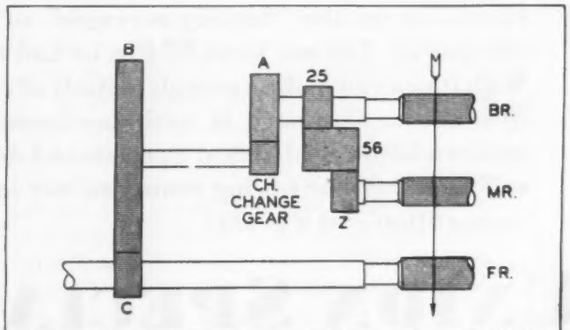

FIG. 1 DRAFT GEARING DIAGRAM

Mr. Martin is not a new contributor to COTTON. Previous articles by him, published in these columns, include: "Roving Frame Cones—Why They Are Concave and Convex", page 82, May 1932; "The Compound as Applied to Cotton Roving Frames", page 80, June 1932; "Roving Frame Tensions—at the Start of an Empty Bobbin", page 71, August 1933; "Bobbin of Roving Analyzed", page 77, November 1934; "The Pressure of the Presser", page 85, December 1934; "The Hyperbola Curve", page 78, January 1935; "Roving Frames—The Winding of the Bobbin", page 96, June 1935. Copies of some of these are available upon request.—THE EDITOR.

ONLY 35 *but on the* BENCH!

WHERE are the diamond heroes of 10 years ago? It takes youth, inexhaustible energy and perfect co-ordination to stay in big league competition. At 35, when men in other fields are still rated young, the major leaguer is through! Witness the ever changing rosters of the teams.

Is your sewing room equipped with machines that should be "on the bench?" The profitable life of a sewing machine is short, much shorter than that of the big league ball player. In a few years, although it may still be sewing satisfactorily, rapid developments in design have made it obsolete, incapable of competition against the high-speed efficiency of modern machines like Union Specials. And you must meet this competition—can you do it with a "minor league" sewing room?

Check up on the "batting averages" of your present equipment. Use our form 374 to be had for the asking. With it you can make a complete study of each machine's operation. Compare it with performance data on modern high-speed Union Specials and decide for yourself whether your sewing room can stay in major league competition—at a profit!

● A Typical Example of Union Special Performance

Style 61200 A Lockstitch Machines, installed by a manufacturer of wash dresses, showed an increase in production of 17.2%. The machines hem 170 dozen per day as compared to 145 dozen, the best production obtained previously.

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tiplied by its 100 r.p.m. The speed of the 1-inch back roll is 18.75 r.p.m. and the surface speed is 3.1416-inch (circumference of 1-inch dia.) multiplied by 18.75 r.p.m. equals 58.905 inches per minute. 353.430 inches divided by 58.905 inches equals 6.00 which is the draft.

The above is the primary or primer method of figuring draft. With the gears and size of rolls given, the puzzle to most students is how to arrange them properly to arrive at the correct answer. A rule that the writer learned years ago, but has never seen in print is a verse from the Bible, "The first shall be last and the last first".

Rule: Place the diameter of the back roll, which is the last, in the left hand column and the diameter of the front roll, which is first, in the right hand column. Place the front roll gear in the column with the back roll then work back against the cotton, first one column then the other. Then multiply the left hand figures together and set their product under the left hand column. Repeat with the right hand column. The products will come in the order for dividing, the right hand product divided by the left hand product equals the draft.

Example: Back roll diameter is 1″ x 8 eighths in one inch equals to 8
Front roll diameter is 1⅛″ x 9 eighths equals to 9

BR = 8 — 9 = FR
C = 35 — 100 = B
CH = 30 — 56 = A

8400) 50,400 (6.00 Draft

Another rule, and the one that is accepted in standard practice, is to turn the columns to the left and draw a line between them. This will bring the left hand column under the line and the right hand column over the line. With this method cancellation can be used, which means to divide a number above the line and a number below the line by such a number as will divide both without a remainder.

$$\frac{3 \times 2\!\!\not{0} \times 7}{\not{8} \times \not{1}\not{0}\not{0} \times \not{5}\not{6}} = \frac{\not{8} \times \not{3}\not{8} \times \not{3}\not{6}}{\not{8} \times \not{5} \times \not{1}\not{0}} = 2 \times 3 = 6.00 \text{ Draft}$$

8 in 56 goes 7 times
7 in 35 goes 5 times
5 in 100 goes 20 times
3 in 9 goes 3 times
3 in 30 goes 10 times
10 in 20 goes 2 times
and 3 × 2 equals 6.00 Draft.

But this method takes too much time so we short cut to a *constant.* A constant is obtained by leaving out the *change gear* in the train. Example:

$$\frac{9 \times 100 \times 56}{8 \times 35 \times 0} = 180 \text{ constant number.}$$

The constant number divided by the draft change gear gives the draft.

Example: 180 divided by 30 equals 6.00 Draft. Also the constant number divided by the draft gives the change gear. The constant with different crown gears are:

99 tooth crown gear constant is 178.20
100 tooth crown gear constant is 180.00
101 tooth crown gear constant is 181.80

It must be remembered however that if *one single* tooth is changed in any of the gears in the train (except the change gear which is left out anyway) or the diameter of either roll, a new *constant* must be figured. The usual range of draft change gears on a roving frame is from 18 to 60 inclusive. The 18 tooth gear will give a draft of 10.0 while the 60 tooth gear gives a draft of 3.00, also note that the larger the change gear is the less the draft is changed. With 60 teeth with 3.00 of a draft, a change to a 59 gives a draft of 3.05 while an 18 tooth gear with a draft of 10.0 if changed to a 19 tooth the draft is 9.47, nearly half a number.

Very often the crown gear is changed to obtain a finer change in the draft. A 60 tooth change gear with a 100 tooth crown gear gives 3.00 of a draft, with a 99 crown we obtain 2.97 draft, while with a 101 crown gear we obtain 3.03 draft.

60 Draft Gear 99 Crown Gear gives 2.97 Draft
60 Draft Gear 100 Crown Gear gives 3.00 Draft
60 Draft Gear 101 Crown Gear gives 3.03 Draft
59 Draft Gear 100 Crown Gear gives 3.05 Draft

To illustrate further we will use a 30 tooth draft change gear:

30 Draft Gear 99 Crown Gear gives 5.94 Draft
30 Draft Gear 100 Crown Gear gives 6.00 Draft
30 Draft Gear 101 Crown Gear gives 6.06 Draft
29 Draft Gear 100 Crown Gear gives 6.20 Draft

So you can see that the larger the draft change gear is the less the draft is changed.

Break draft takes place between the back and middle roll and is not considered when figuring the total draft or when obtaining the constant. The set up for break draft follows:

BR = 1″ — 1″ = MR.
MR = Z = 23 — 25 = BR.

23) 25 (1.087 Draft between the back and middle roll and this is the break draft.

The draft between the *middle* and *front* roll with a 30 tooth change gear follows:

MR. = 1″ = 8 — 9 = 1⅛ = FR.
C = 35 — 100 = B
CH = 30 — 56 = A
25 = 25 — 23 = Z

$$\frac{9 \times 100 \times 56 \times 23}{9 \times 35 \times 30 \times 25} = \frac{138}{25} = 5.520 \text{ Draft}$$

Now one says if 1.087 is added to 5.520 the answer would be the total draft, but this is not so. 1.087 plus 5.520 equals 6.607 instead of 6.00 which is the correct answer. 1.087 × 5.520 = 6.010 draft, correct.

Draft between rollers, whether three, four or five lines, are always multiplied one by the other, instead of being added, to obtain the total draft. The reason for this is that 1 inch going in at the back roll is drawn out to 1.087 times of itself by the middle roll. 1 × 1.087 = 1.087. 1.087 going in at the back of the middle roll is drawn out to 5.520 times of itself by the front roll, 1.087 × 5.520 = 6.010 draft. The one one hundredth more than the six would never be missed. This feature of the action of draft is often puzzling to the best of mill men.

Further Points on Weaving Seersucker

IN further reference to the inquiry about weaving seersucker, and the answer from Mr. Moberg, published on page 95, May 1935 COTTON, the inquirer has submitted the following further question:

"We had two warps drawn according to his suggestions. The looms run little better than with the other system. We have the Regan warp stop motion, and as soon as some ends get a little loose, the loom stops. Which is better: keeping the whip roll low, so there is more space between the top and bottom yarn (about 2 inches), or having the warp stop motion high, and with the harness measuring 6½ inches from reed to double front harness; and 9⅝ inches from last single harness up to the first bank of drop wires? The drop wires jump about ½-inch.

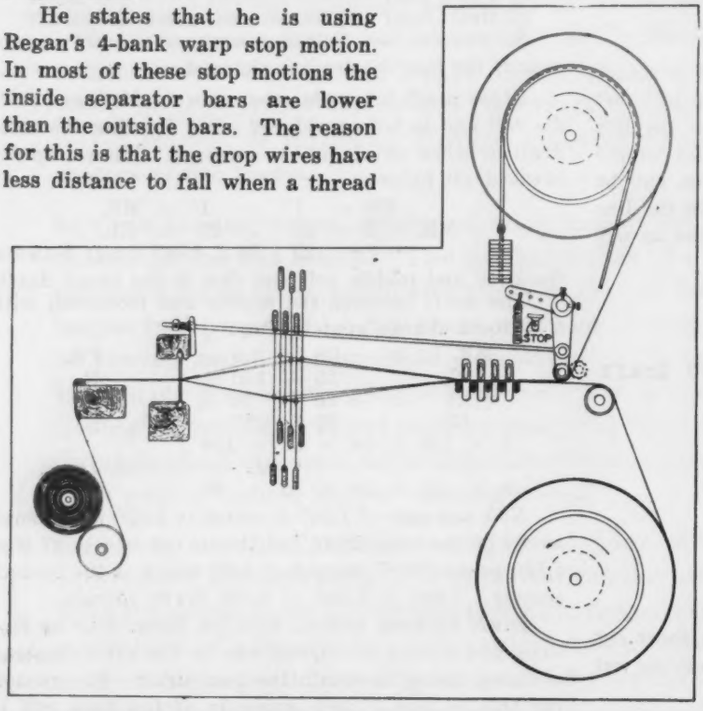
"The harness cams are 3¼x3½ and we use two of them; both the same measure for front harnesses as well as for back harnesses. Now, we tried some warp 2 ends in 1 eye, 4 in a dent, and there were not so much waste and knots, but the end gets loose."

Mr. Moberg has sent the following reply:

EDITOR COTTON:

The subscriber who had trouble in seersucker weaving, and whose first inquiry with our reply was published in the May issue of COTTON now writes that he still has some trouble with the seersucker ends getting loose and stopping the loom through the warp stop motion.

He states that he is using Regan's 4-bank warp stop motion. In most of these stop motions the inside separator bars are lower than the outside bars. The reason for this is that the drop wires have less distance to fall when a thread breaks, and will so stop the loom quicker. While this is all right on ordinary fabrics, it will give trouble on the loose ends of seersucker.



The sketch shows the reed at front center with fully opened shed. Such early timing cannot, of course, be made. This is drawn so, purely to show the crimp motion in active position, and the larger shed of the seersucker end without having to resort to two drawings. Note how the second harness carrying the seersucker ends is lifted higher than the ground harnesses to give larger shed and take up the slackness of the seersucker ends.

If his warp stop motions have these low inside separator bars, it is necessary to raise these bars in level with the outside bars by placing pieces of wood underneath them or, if this cannot be done, to purchase new bars of the same dimensions as the outside bars. (See sketch herewith). In seersucker weaving it is essential that the drop wires ride as high as possible as they will partly drop at some point in the cycle of weaving when the seersucker ends are in their slackest state. If the drop wires do not ride high enough they will drop sufficiently to arrest the movement of the oscillating bars and thus stop the loom. The warp stop motion must be timed so that the indicating movement of the oscillating bars commences when the seersucker ends are under their greatest tension, which is at fully open shed or at the time when the reeds beat up the filling.

In the ultra-modern warp stop motions for weaving terry towel, which like seersucker gives troubles with loose ends of the pile warp, there is a lifting bar underneath the two front rows of drop wires on which the pile ends are drawn. This lifting bar supports the drop wires while the pile ends are slack and move out of the way when they are tight, so if an end is broken they will drop the full distance and stop the loom. This ingenious arrangement would also work very well on seersucker but if the loom is set right there should be no need of it.

The arrangement your subscriber describes for the crimp motion should work satisfactorily. However, the distance between the whip roll and crimp bar of two inches is altogether too much. The under side of the crimp bar, when this is fully in for the crimp, must be in level with the top of the drop wire banks and the top of the whip roll should be set about one-half inch lower, at most. (See sketch). It is necessary that there be no drop of the seersucker ends from the crimp bar to the drop wire banks when the former is fully in for the crimp, for if this is permitted the drop wires will be pressed up against the lower part of the oscillating rods and thus will interfere with the free sliding through the drop wires of the seersucker ends. Also, see that the crimp bar revolves freely in its bearings. Anything that in-

WE invite our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do no thold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

terferes with the free sliding of the seersucker ends must be eliminated.

I want to emphasize the importance of having all threads from the beams going into the drop wires perfectly straight, which I pointed out in my previous reply. The threads must not be crossed or twisted together, for this will delay the take-up of the seersucker threads for several picks. Then they will snap free of the interference which, of course, will make these threads looser than the rest and will allow the drop wires to drop sufficiently to stop the loom.

We must keep in mind that we are depending only upon the friction from the reed and the beating up of the filling to pull the seersucker ends forward, and any slight resistance to this pull will prevent the ends from taking up properly for every pick.

The timing of the shed should be early, so that the picks will be beaten up behind crossed shed as this will exert a greater pull of the seersucker ends and also hold them more securely from slipping back after they are woven into the cloth. I would recommend that the shed be timed so the harnesses will be level with the crankshaft a little beyond bottom center. A little experimenting will bring out the proper timing for his particular kind of work.

The subscriber states that he is using cams for the harness motion. This is a disadvantage as compared to dobby and head motion, as it is rather difficult to get a larger shed on the seersucker ends. On a dobby or head motion we would simply raise the stirrups higher up on the jacks to get a larger shed on the harnesses on which the seersucker ends are drawn. On a cam loom it is more difficult. However, there are three ways in which this can be done, but all are rather expensive.

1. Build up the throw of the cams operating the seersucker harnesses.

2. Purchase new cams with a larger throw for the seersucker harnesses.

3. Shorten the treadles operating the seersucker harnesses.

The last could be done by cutting out a piece of the treadles between the treadle rolls and the fulcrums and welding them together again. We would then have to extend the treadle stand on one side towards the front of the loom so the treadle stud for the two seersucker treadles would be moved as much forward as we shortened the treadles. We would also have to replace the treadle pin by two studs, one for the seersucker treadles and one for the regular treadles, as a pin extending across the six treadles could not be used. By this arrangement the movement of the seersucker treadles would be increased and consequently the shed from these treadles would be larger than that from the regular.

Without seeing the looms in operation it is rather difficult to state just where the trouble is, but I trust the additional information I have given will aid him in working out the solution. If there is any further questions he wishes to ask I shall be glad to answer them.

IVAR MOBERG.

Editor's Note: Mr. Moberg will be especially glad to discuss any further points on this problem at the request of any reader, and to receive other weaving problems.

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Asks for Weights and Settings for Sliver Lap and Ribbon Lap

EDITOR COTTON:

I would like very much to see in your "HOW OTHER MEN MANAGE" department some discussion on the following:

Using 1 1/8-inch and 1 1/16-inch cotton, with a card sliver of 44 grains per yard, what are the best weights per yard, and settings, for the sliver lap and ribbon lap machines, to make a smooth, strong, 56-grain comber sliver, with 15 per cent noils taken out? This is 8-head, 5 draw-box roll Whitin machine.

I would like to have all settings given, and any other information on this process that any of your readers might be willing to give us.

CONTRIBUTOR NO. 6393.

How We Stopped Filling From Sloughing Off

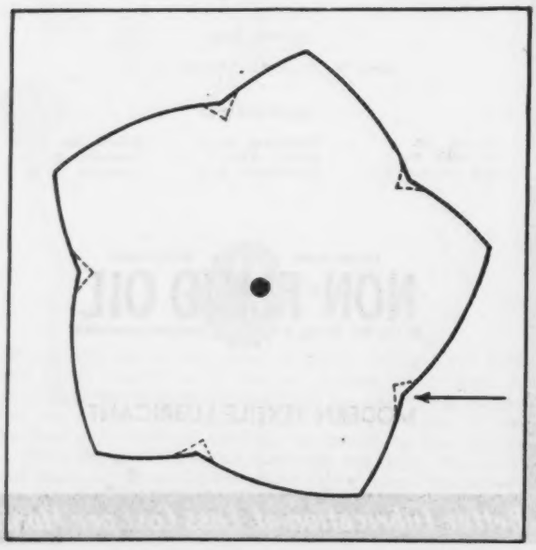
EDITOR COTTON:

I notice on page 83 of the March issue of COTTON that the subject of preventing sloughed off filling has been brought up by "CONTRIBUTOR NO. 6359". This prompts me to tell of the experience I had with this particular trouble of filling sloughing off.

When I came to this mill about three years ago the weavers were complaining all the time about the filling running so badly. It had become one of those "sore spots" with them. Since this seemed to be a place at which a great deal of improvement was possible, I began to try to find a remedy.

The first thing I did was to examine the quill, and although I do not think the quill was the serious part of our trouble, I changed the design of the quill from one which had ridges along the barrel to one with little grooves to hold the filling on. I would recommend this design of quill to anyone having trouble with sloughing off.

Now for the thing which really stopped the sloughing off: Upon careful examination I noticed that there was a little soft spot right at the bottom of the traverse on every full quill of filling. In other words, it seemed that when the filling pulled off in the loom, it would have a tendency to fall over the end which was due to lie in the shed and instead of pulling off one strand, it would take two or three. I went back to the spinning frame and watched the traverse change at the top and bottom and there seemed to be a slight lag on the change. My first thought was that the cam had worn on the point of change so that it would not change quickly enough, so we put on a new cam. We also put on a new Pitman roll and stud to be sure there was no lost motion. This did not remedy the trouble. Then we did a little cam designing of our own. We filed out the recesses in the cam as shown in the accompanying sketch until we got the traverse to change more quickly at the bottom. We ran a few doffs of the filling and the weavers proclaimed it the best filling they ever had. It stopped the "puffy" place which was causing the sloughing off.



Another thing which improved our filling was a slightly faster traverse. By speeding up the traverse the filling is laced on tighter and gives a wind somewhat similar to that obtained on a cone winder.

I hope these suggestions will be of help to your inquirer as I know exactly what he is up against.

M. R. H. (N. C.)

Preventing Tangled Slubber Bobbins

EDITOR COTTON:

On page 79 of January COTTON you published a question from "J. R. (ALA.)" asking a remedy for tangled slubber bobbins when two-thirds full. He reported that the keys are good in all the gears and shafts and that the carriages do not dwell on the changes. He said the lay is not piling and is close enough not to allow furrowing. He said the frames start up with the proper tension, though after running about ten layers the ends become slack and require taking up a slight amount, and the rest of the doff the ends need no further adjustment. He said the bobbin gears do not jump, and the same spindles do not show up this difficulty on every doff.

I have had this experience and can say that it causes a lot of bad work if it is not attended to right away. If the whole doff were the same, one would naturally look for such things as improper lays per inch, improper taper or a slippage of gears in the bobbin train of gearing. However, when there are only a few now and then and not any on some doffs, it is very readily ascertained that the cause must be at the individual spindle.

I will suggest what I think may be our friend's trouble—I know that it helped in my case. To begin with, a jumping bobbin gear will cause this trouble (though our friend says the gears are not jumping). I have seen many times when I thought the bobbin gear was not jumping that careful study would show that it was jumping. I would suggest to "J. R." that he examine the bobbin gears to see that no teeth are broken or plugged with dirt, and also see that they are not dry. This being done, I would suggest the

same for the spindle gears. With both bobbin and spindle gears in perfect condition, I would suggest the same for the spindle gears. With both bobbin and spindle gears in perfect condition, I would suggest that the bobbins be looked over to see that the key slots at the base are not worn.

The only thing left now is the flyer, and this can cause tangled bobbins quicker than anything else. It is very important that the presser is not too high or too low. Quite often a slubber tender will bend the presser to avoid running over and the first thing you know there are quite a few flyers with bent pressers. It is also a good plan to examine the flyer pins to see that they are not worn too badly.

Sometimes when doffing, the roving slips out of the presser eye and the tender only uses one wrap on a few bobbins when starting up; in such a case a soft bobbin results and quite often tangles.

I would also suggest that the proper cone gear be on the frame so as to avoid winding back of rack after a few lays have been run.

W. C. (CONN.)

Eliminating Leaf and Small Particles

EDITOR COTTON:

I would like to discuss the eliminating of leaf and small particles from resultant yarn. For best results, in the lay-out I shall give, it is best to use some form of cleaning machine to convey the cotton to the lapper from the bale breaker that does not employ the air suction system. Every carder knows that it is impossible to remove the leaf and specks entirely from the cotton, but all are willing to admit that it can be greatly reduced by having the correct speed and proper settings for the lappers and cards. Of course, a much cleaner yarn can be produced where combers are included in the lay-out, or where double carding is employed.

The lay-out I have in mind consists of one vertical opener and bale breaker, two processes of picking and single carding. Now, if we should place an order with the machine shop they would desire to know just what grade of stock was to be run on the machines to be built. They would want this information so as to determine the correct speeds, etc., for the machines to be installed to suit the best requirements of the mill, and I believe I can safely say that the machine builders can be relied upon 999 times out of 1000, but after these machines have been installed in the mill and the stock begins to change little by little until we are far from the average stock usually run before we realize it, then is when the trouble is prevalent, and it is necessary to use a little initiative. As the old saying goes, it is good to rely upon precedent to a certain extent, but if no one ever used initiative there would be no progress except by accident. So the surest way to a solution of any trouble is to use a mixture of initiative and precedent.

Speaking of yarns, it is desired to produce a yarn free from leaf and specks in preference to strength, it would be desirable to change the setting and speeds

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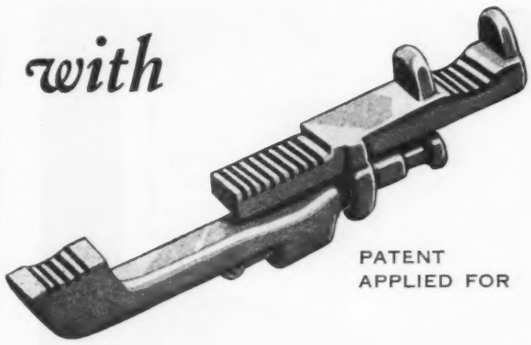

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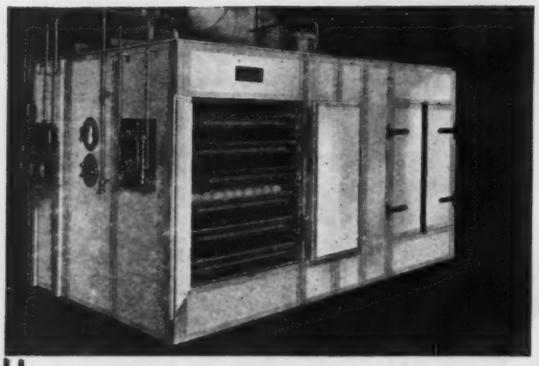

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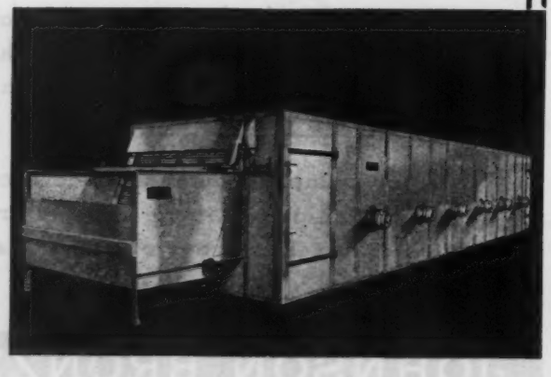

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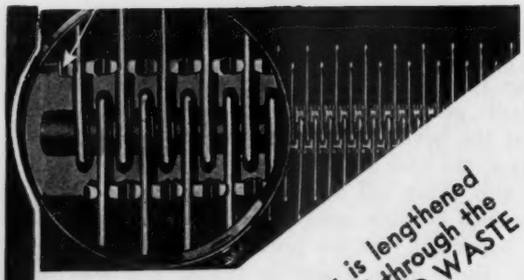

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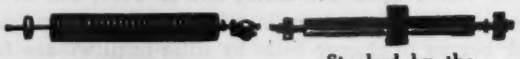

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of the pickers and cards as well as to change the quantity of production, but of course there are several things to be taken into consideration when making such a change that probably would suit no two mills alike.

I will give here some settings and speeds for cards where it is desired to eliminate the leaf and small specks from the yarn to be produced:

Feed plate, 10/1000
Mote knives, top, 12/1000*
Mote knives, bottom, 17/1000*
Nose of licker-in screen, front, ¼-inch
Nose of licker-in screen, back, 17/1000
Licker-in to cylinder, 7/1000
Back knife plate, bottom, 17/1000
Back knife plate, top, 22/1000
Flats, 7/1000.

*(The mote knives should be tilted so as to have the points of the knives facing the licker-in. The surest way to determine the angle at which the knives should be set in this case is to tilt the blades forward as far as they will go without hanging the licker-in teeth while the licker-in is being turned slowly by hand with the knives pressed in to touch the licker-in.)

Speed up the flats from 3 inches per minute to 3½ inches per minute. The doffer should be set at 7/1000 and should run at 9 r.p.m. The production of the card should be 106 pounds in 10 hours. The cards should be stripped every 2½ hours. The licker-in speed should be 550 r.p.m., and the draft on the cards should be 96.

Remember that piecing laps overloads cards for a short period, which will cause specks in the yarn.

I wish some of the readers of this magazine who are using the double-carded system would give this idea a trial and let us know of the results obtained.

T. R. (N. C.)

What Causes "Pin Holes" on Jacquard Looms?

EDITOR COTTON:

I would like very much to see in COTTON some discussions as to the causes and prevention of pin holes on Jacquard looms. What we call a pin hole is caused by the filling kinking on the battery end of the loom about one or two inches from the temple, and snagging a warp end, thereby leaving a hole in the cloth. I hope some of your readers with experience will discuss this.

CONTRIBUTOR NO. 6398.

Report of Meeting at Gibsonville

(Continued from page 53.)

with 15 per cent size."

Mr. Atkins pointed out, as to length of cooking time, that he had tried everything from around two hours down to 40 minutes, on his potato starch and that seemed to make no difference as to the sticking. His superintendent, Mr. Anderson, answered a question stating that they use 12 pounds of softener in a 240-gallon mix, with 1½ pounds of Arcy. He added that undoubtedly the suggestion as to the use of the squeeze rolls, as made by Mr. Copeland, would help them a lot.

Mr. Rushworth made the statement that, "my ex-

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The raw materials, the experience, the men and the equipment—backed up by rigid inspection of every inch of cloth, maintains the quality leadership established years ago by PHILADELPHIA in Roller, Clearer and Slasher Cloths, as well as Stamping Blankets, Palmer Blankets for Sanforizing and Lapping Cloth for Printing.

Our Southern Sales Manager, Mr. Clarence B. Seal, will gladly advise with you on any felt problem.

PHILADELPHIA FELT CO., FRANKFORD, PHILADELPHIA, PA.

PHILADELPHIA

This is the Age OF SPEED and HIGH DRAFT SPINNING

Ring Travelers of greater endurance are necessary. Wentworth Double Duty, Wentworth Gravity, Gravity Express and Lowboy meet these new requirements.

New Duplex Twister Travelers — C. E. F. Twister Travelers

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Southern Office: — 131 West First St., — Charlotte, N. C. — C. D. Taylor, Southern Agent

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SPECIALISTS
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DRAWING ROLLS
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UDYLITE PROCESS OF RUST PROOFING

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CHARLOTTE, N. C.
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Phone 3-1533

The Pick Counter that has everything

Center Drive (no rights or lefts)
Easy Operating Shift Switch
Tamper-Proof
Locked against Creeping
Rust-Proof throughout
Easily Installed

DURANT MFG. CO.
1922 N. Buffum St. Milwaukee, Wis.
181 Eddy St. Providence, R. I.

perience is, why the need of Arcy if you are going to cook potato starch for two hours. The reason for Arcy is to break down the starch and curtail the time of the boil and I have never boiled potato starch for two hours. I boil it 90 minutes without Arcy to break down the granules, but using Arcy my experience is that the idea was for it to break down the starch and modify the starch and cut down on the length of time of boiling."

"I do not understand that Arcy is for breaking down the starch," said D. F. Short of Lynchburg. "The purpose is to change pearl starch into thin boiling. You can break down any starch by boiling it. I boil my starch for 1½ hours and use Arcy."

"When Arcy was introduced, it is my recollection that the recommendation of the producers was that it would cut down the time of boiling," said Mr. Rushworth. "The idea of Arcy was to break down the starch granules and to modify the starch."

Mr. Anderson asked Mr. Copeland for his recommendation as to the weight of squeeze rolls to use on 19s yarn for sheetings, from 2,800 to 4,400 ends, and Mr. Copeland recommended a roll of from 450 to 500 pounds.

Conditioning Filling

There was a brief discussion on the last weaving question, which was, "How do you condition your filling before sending it to the weave room?" Mr. Copeland pointed out that the matter of conditioning filling depends on the class of goods and how much twist you are putting in the yarn. He said, "we have just about every known device for conditioning, and run twist running from 5 to 75 turns, and we have everything including an electric bake oven, the Hygrolit system and steaming of different kinds." He pointed out that they use these different methods depending on the amount of twist in the yarn and the kind of goods into which the filling is going.

The meeting was concluded with a brief discussion on machine shop questions. The first question in this discussion, which was led by J. O. Thomas, asked whether the hobbing machine or the shaping machine is better for making gears but there was no discussion. The next question asked whether it is good practice for a local mill machine shop to re-neck spinning and speeder and drawing frame rolls, and it was the opinion of those present that it is not good practice for a mill shop to do this unless adequately equipped for the purpose.

"Should a loom motor pinion be case hardened?" was the next question, and it was declared that these pinions should be case hardened in order to cut down on replacement costs.

"Will there be anything gained by using ring gears on loom friction gears?" was next asked. R. J. Atkins reported that they have been using ring gears on friction gears for 10 or 12 years and get good results; when the gear goes bad they just replace it with a ring and it lasts just as long or longer than the original cast teeth. Mr. Copeland said they use ring gears on both the pick shaft and the crank shaft.

A delicious and enjoyable chicken dinner, served complimentary to the delegates by the good ladies of Gibsonville, concluded the meeting.

Avoid A Tragic Future

BY KEEPING YOUR EQUIPMENT MODERN

•

Mr. J. M. Shelton, vice-president, Robert & Company, Atlanta, made this recommendation in his address on "Modernization", reported in the April, 1935, *Textile World*:

"Be accurately informed as to the exact condition of your equipment and its relative efficiency as compared with new machinery and processes."

"It doesn't take a prophet," asserts Mr. Shelton, "to forecast that there will always be a huge market for textile goods in this country. Someone must supply that market. Now is the time for manufacturers to decide whether they will supply this demand and at a profit—or whether they will sit by and take what is left after the well-equipped mill has gone home with the bacon."

The Type K Bobbin Stripper—with a speed of 100 to 120 bobbins a minute—is making it possible for many manufacturers to supply the demand for their goods at a profit.

The morning this advertisement is being written, we quoted a mill on a Type K Bobbin Stripper to replace the next most efficient machine, which the mill is using, and calculated a maximum possible saving of more than 275% net yearly, and a minimum possible saving of more than 100% net yearly. There are hundreds of other mills in the United States that can make similar savings through changing to Type K machines.

Our salesmen and representatives are prepared to investigate any installations and to make recommendations and prepare estimates of savings that can be made through change to Type K machines.

If you want to know what can be done in your mill, write us. There is no obligation.

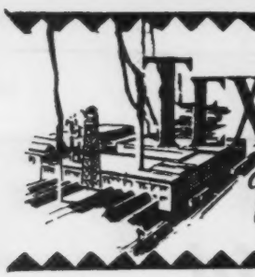
the new **TYPE K** *Bobbin Stripper*

The Terrell Machine Co., Inc.

1200 North Church Street
CHARLOTTE, NORTH CAROLINA

MR. LUTHER PILLING, Danielson, Connecticut, *Representative for N. Y., N. J., Pa., New England States, and Canada*

GEO. THOMAS & CO., LTD., Manchester, England, *European Agents*



TEXTILE BOOKLETS *Worth Writing For!*

The booklets or catalogs briefly mentioned below may be obtained by any readers of COTTON who will write to the Company issuing them or to COTTON, Grant Bldg., Atlanta, Ga.

169. Tube-Tex High Speed Steamer and Finisher—Describing these new steaming and finishing machines for tubular knitted fabrics, which handle cotton, rayon, woolens and mixtures at speeds up to 45 yds. per minute, being unique in that patterns, designs and stripes are finished straight and free from any distortions. H. W. Butterworth & Sons Co., York and Cedar Sts., Philadelphia, Pa.

171. Design of V-Belt Drives—48 page booklet full of valuable tables and data showing the type, number and design of V-Belts that will give the greatest efficiency on each particular drive. The Gates Rubber Company, Denver, Colorado.

172. Rust Proofing—Free booklet on rust-proofing for spindles, fly frames, rolls and other textile machine parts. Textile Spindle & Roll Corporation, Charlotte, N. C.

173. Over the Rough Spots—28 page booklet describing Stonhard resurfacer for repairing and resurfacing concrete, wood, brick and composition floor, making permanent repairs to badly worn surfaces. Stonhard Company, 401 North Broad St., Philadelphia, Pa.

174. Robertson Chain Link Fencing—giving details and specifications of Robertson chain link fencing, providing efficient and low cost protection for mill property. W. F. Robertson Steel & Iron Co., Elm & Second Sts., Cincinnati, Ohio.

175. Slashol — Pamphlet describing the many advantages and economy of Slashol for sizing, as compared with tallow. Wm. C. Robinson & Son Company, Dock and Caroline Street, Baltimore, Md.

11. Whitinsville Rings—16 page illustrated booklet, describing ring manufacture, measurements, types, uses. How to determine flange sizes. By Whitinsville Spinning Ring Co., Whitinsville, Mass.

25. "Lupogum" and "Monopole Oil"—Two booklets on textile sizing and finishing products. Jacques Wolf & Company, Passaic, N. J.

29. Continuous Card Stripper—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc. Saco-Lowell Shops. 147 Milk St., Boston, Mass.

30. Lubrication of Textile Machinery—32 pages, illustrated. Data covering the economical lubrication of all textile machines. New York & New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

38. Sleaziness in Full Fashioned Knitting—Illustrated survey with samples of fabric showing causes of sleaziness and methods to be employed in eliminating it.—By Textile Machine Works, Reading, Pa. (This company also issues parts catalog for Reading full fashioned machines with general information on subject of full fashioned knitting.)

55. Interpretation of Analysis for the Layman—An eight page booklet explaining what the various items used in fatty oil and sulfonated oil analysis mean, enabling the ordinary textile man without chemical education to interpret the various chemical analyses. National Oil Products Co., Harrison, N. J.

62. Rubber Products for the Textile Industry—A 40 page booklet giving a wealth of information on the proper selection, installation and operation of rubber belts, together with charts, showing horsepower rating, pulley sizes, V-belt sizes, also information on all types of hose and rubber covered rolls used in the textile industry. Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J.

64. Efficiency and Performance of SKF Roller Bearing Spindles—A twelve page booklet showing the advantages in power consumption, increased production, savings in lubrication, increased yarn breakage strength to be secured through roller bearing spindles. SKF Industries, Inc., Front St. and Erie Ave., Philadelphia, Pa.

65. Why Cooper Hewitt Light is Better Than Daylight—A 16 page booklet explaining in detail the importance of good lighting and the necessity of proper quality as well as proper quantity of light. General Elec. Vapor Lamp Co., Hoboken, N. J.

66. Dronsfield's Patent Portable Auto-Feed Needle Point Grinder No. 176—describing a new departure in card grinding—John Hetherington & Sons, Inc., 250 Devonshire St., Boston, Mass.

69. Monel Metal Equipment for the Textile Industry—A 50 page buyer's guide and catalog with more than 100 illustrations of various items of monel metal dyehouse equipment. International Nickel Company, Inc., 67 Wall St., New York, N. Y.

72. The Merrow Butted Seam—A 16-page booklet defining and illustrating the Butted seam, describing its properties and outlining some of the advantages to be gained by its use in textile fabrics. The Merrow Machine Co., Hartford, Conn.

77. Bulletin S 200—Illustrating and describing the new Reeves Variable Speed Drive for spinning and twister frames, explaining its many distinct advantages, and giving charted results of exacting tests. Reeves Pulley Company, Columbus, Indiana.

88. Dayton Cog Belt Catalog—A 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept. C-11, Dayton, Ohio.

93. Metso — Describing this industrial cleanser which has wide use in industrial cleaning of metals, floors, etc., and is used in kier boiling, silk and rayon degumming. Philadelphia Quartz Co., 121 S. Third St., Philadelphia, Pa.

94. New Development by Onyx—Eight-page booklet describing and giving uses of new developments in sulphonated aliphatic compounds . . . called Aliphatic Ester Sulphate and Glyceryl Sulphates. Onyx Oil & Chemical Co., 15 Exchange Place, Jersey City, N. J.

97. Suggestions For The Modern Silk and Rayon Throwster — describing the various uses for Laurel Brand Products and giving valuable suggestions in silk soaking, degumming, dyeing, sizing and finishing. Laurel Soap Mfg. Co., Inc., 2600 East Tioga St., Philadelphia, Pa.

98. Saving Labor, Material and Power in the Textile Industry—A 20 page booklet showing the advantages and typical installations of temperature, pressure and humidity instruments and controllers in various processes of textile manufacturing. Foxboro Co., Foxboro, Mass.

106. Cotton System Warp Sizing on Multiple Cylinder Machines—a folder showing the advantages of this type of machine in making warps of acetate and other synthetic yarns and spun silk.—Charles B. Johnson, Paterson, N. J.

107. Complete Information on Alemite Lubrication. Showing how costs can be reduced through proper lubrication. Alemite Corp., 1828 Diversey Blvd., Chicago, Ill.

108. Thickening Materials for Textile Printing—discussing the more important materials and methods employed in the preparation of color thickening so that it may be properly and economically transferred to the cloth in textile printing. Stein, Hall & Co. Inc., 285 Madison Ave., New York City, N. Y.

110. 3-In-One for Industrial Uses—showing the many industrial uses and advantages of this oil. Three-In-One Oil Co., 70 Varick St., New York, N. Y.

115. How to Cut Cloth Room Costs with Automatic Picking Machines and Improved Inspecting Machines—Hermas Machine Company, Warburton Ave., Hawthorne, N. J.

116. Arcy—Telling in an interesting way the story of Arcy, which completely liquefies ordinary thick boiling pearl starch, and its many advantages. Drake Corporation, Norfolk, Virginia.

117. Anti-Friction Bearings as Applied to Spinning, Drawing and Twisting Frames—This bulletin shows with detailed drawings how a simplified design of roller bearing applications is made to replace the plain babbitt bearings and lists the advantages that are gained. It deals primarily with better continuous production and in consequence freedom from equipment care and repairs. Hyatt Roller Bearing Co., P. O. Box 476, Newark, N. J.

119. The World's Finest Sewing Machines—a condensed catalog giving details of the various Willcox & Gibbs sewing machines. Willcox & Gibbs Sewing Machine Co., 658 Broadway, New York, N. Y.

120. Goodyear Mechanical Rubber Goods Catalog — 40 page catalog giving practical information and tables helpful in the selection of the proper belting, hose or packing to suit the requirements of the mill. Goodyear Tire & Rubber Co. Akron, Ohio.

121. Engineered Packages for the Textile, Dry-Goods and Apparel Industries—Showing the savings to be made through the use of properly engineered packages of corrugated fibre in the shipping of yarn, woven and knitted products. Hinde & Dauch Paper Co., Sandusky, Ohio.

122. Water Filters and Filtration Equipment—Containing complete description of the chemical processes involved in the coagulation and precipitation of foreign matter, the removal of iron, oil, manganese from water and the production of clean water suitable for the textile industry, together with tables of specifications for standard filters, and information showing the extra profits to be made by the mill through reduction in costs and process difficulties, through removal of undesirable impurities in water. Permutit Company, 330 W. 42nd Street, New York, N. Y.

124. New Condensed Catalog of Ball Bearings and Power Transmission Units—Combines all of the information and the industrial uses of radial ball bearings as well as the Fafnir power transmission line of wide inner ring and ball bearings. It gives complete information, interchangeability tables, dimensions, prices, etc. Fafnir Bearing Company, New Britain, Conn.

131. Houghton's Leathers for the Textile Industry—This invaluable handbook contains 88 pages of data on the proper selection and application of all types of Textile leathers, including belting, special spindle belts, round leather belts, loom leathers, mill strapping, leather aprons, etc.—E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

135. The Pick Method of Weaver Wage Payment—A manual of practical information describing methods to be followed in using Pick Counters; suggested forms, and tables included. Durant Manufacturing Co., 1932 No. Buffum St., Milwaukee, Wis.

139. Textile Detergents—Theory of the use of alkalis and control of pH.—This 32 page booklet explains in simplified manner for the benefit of the layman the chemical processes that take place in using textile detergents in the finishing of textile goods. It contains many useful tables and data. Detergent Products Corp., Peachtree Bldg., Atlanta, Ga.

140. Textile Machinery—Improvements in Design and Methods of Lubrication. A discussion of the problem of lubrication of textile equipment covering operating conditions and factors affecting and affected by lubrication. Card Room Operations, Twisting and Spinning Machines, Silk Throwing, Looms, Knitting Machines, etc., covered. Available in copy of June 1934 issue of "Lubrication." The Texas Company, 135 E. 42nd St., New York City.

143. Winders and Winding — Describing the various processes in the preparation of cotton, woolen and silk yarn and illustrating and describing the different uses of Universal winders and the various attachments to suit the particular winding requirements of the various branches of the textile industry. Universal Winding Co., 95 South St., Boston, Mass.

146. Lubrication Cost Recording—Outlining the factors to be considered in determining correct lubrication costs, and showing a number of typical lubrication cost sheets to assist a mill in installing an efficient lubrication cost system. Gulf Refining Company, Department C, 3800 Gulf Bldg., Pittsburgh, Pa.

148. Leather Packing—28 page booklet giving timely hints on the proper selection and installation of leather packings, the various types available, sizes and prices. Alexander Brothers, Inc., 406 N. Third St., Philadelphia, Pa.

150. Engineering Data Book on Mechanical Rubber Goods—21 pages of useful information and engineering data, designed to simplify the selection of belting, hose and other mechanical rubber goods for industrial service, including a review of belting requisites for a wide variety of uses as well as helpful tips on installation procedure. B. F. Goodrich Co., Mechanical Division, Akron, Ohio.

152. Plant Checkup List—Crane Company, 836 South Michigan Ave., Chicago, Ill

153. Descriptive Folder of the New Low Cost Hermas Shear—Hermas Machine Co., Warburton Ave., Hawthorne, N. J

154. Johnson Bronze Bulletin No. 340—showing over 600 sizes Johnson general purpose bronze bushings. Johnson Bronze Co., New Castle, Pa.

155. Link-Belt Catalog 1274 on the P.I.V. Gear — giving details of this positive variable speed control. Link-Belt Co., 910 South Michigan Ave., Chicago, Ill.

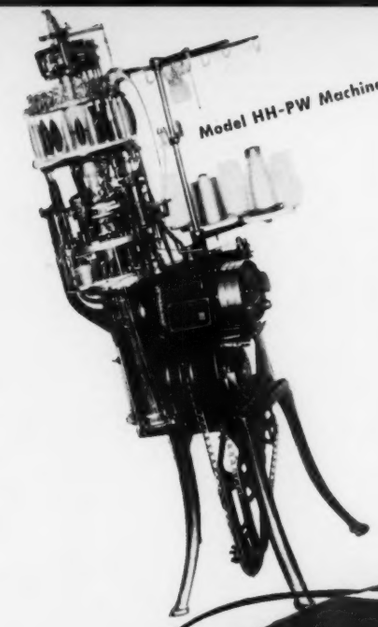
157. Grading Rules and Complete Specifications for Laying and Finishing Maple Floors—Maple Flooring Manufacturers Association, 1794 McCormick Bldg., Chicago, Ill.

161. Fence—How to Choose It—How to Use It — book explaining in detail how to choose a fence, determine values and prevent costly mistakes. Cyclone Fence Co., Dept. 4211, Waukegan, Ill.

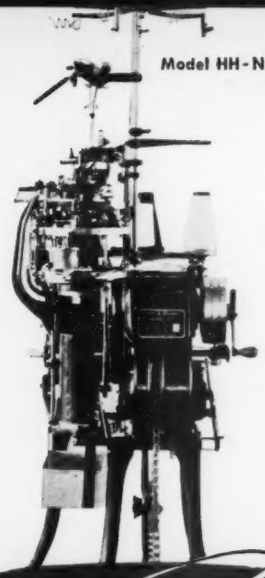
162. A New Deal in Skein Winding, by Albert H. Brugger. A 12 page technical booklet that is a competent, thorough study of how a long neglected process can quickly evolve into an easy source of profits. The Brugger Winding Company, 41 East Gowen Ave., Philadelphia, Pa.

164. Johnson Rotary Pressure Joints—Bulletin describing this rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instructions, types, sizes, dimensions and prices. The Johnson Corp., Three Rivers, Mich.

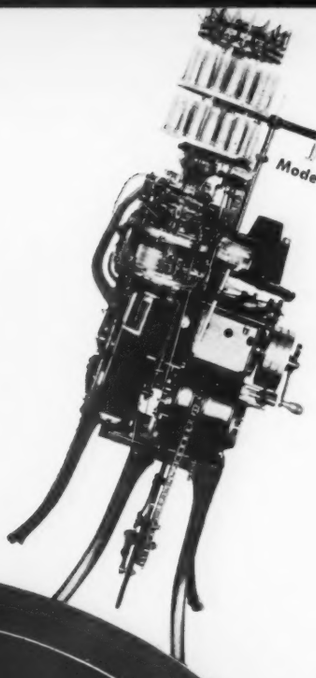
165. New Departure Speed Power Unit—Bulletin giving details of this compact, self-contained driver that gives a thousand different speeds at a turn of the wrist. New Departure Manufacturing Company, Bristol, Conn.



Model HH-PW Machine



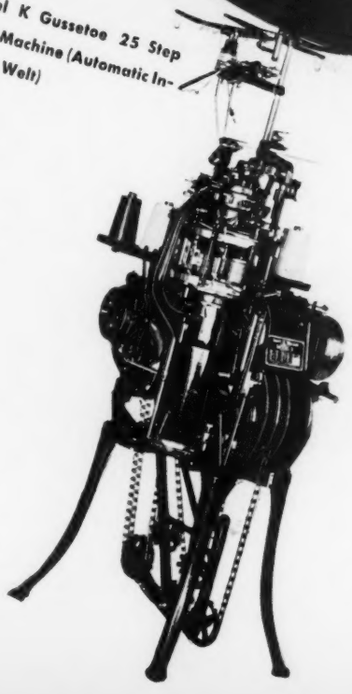
Model HH-NRP



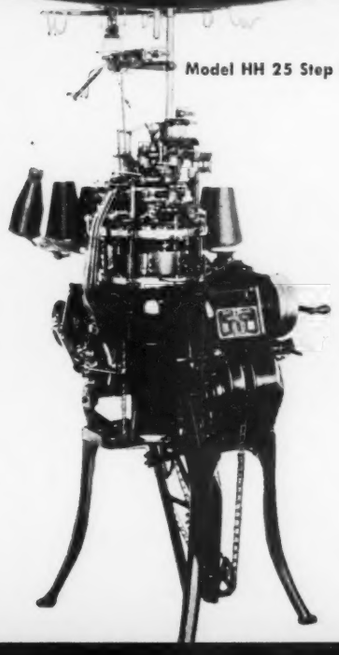
Model ES 36 wrap yarns

For completeness—

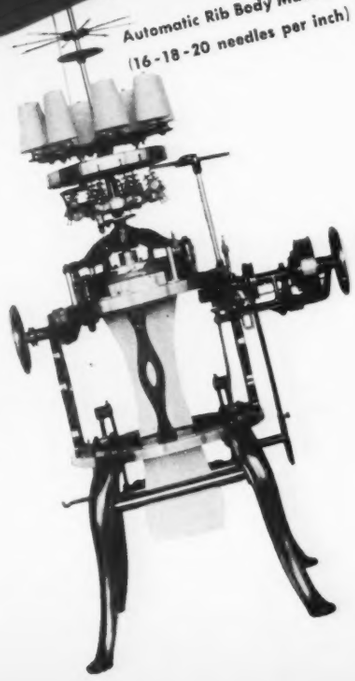
SCOTT & WILLIAMS



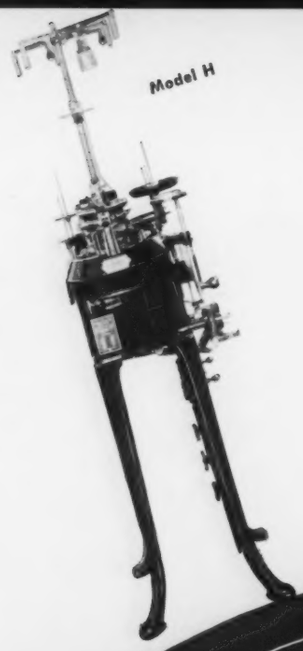
Model K Gussetoe 25 Step Spiral Machine (Automatic Inturned Welt)



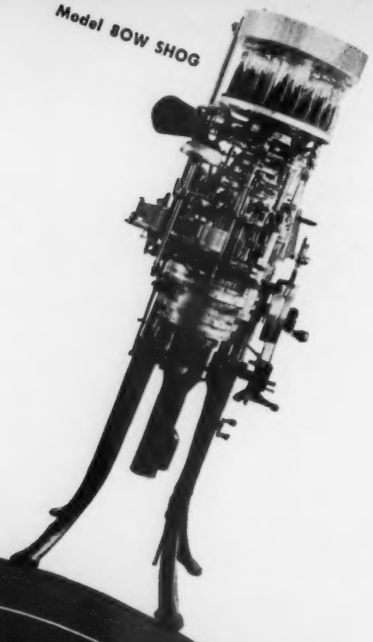
Model HH 25 Step Spiral



Automatic Rib Body Machine (16-18-20 needles per inch)



Model H



Model BOW SHOG

and remember

behind every machine shown on these two pages there is a splendid tradition of quality leadership.

BOW SHOG Facilities for using 30 wrap yarns, with patterning possibilities of 15 steps plus shogging backward and forward of wrap yarns, produce blended and contrasted wrap color effects in unlimited variety of clox and all-over patterns.

MODEL L With a wrap yarn for every needle, shogging, and scope of 15 step wrap patterning—this machine (and 200 needles or coarser) produces the exclusive fancy half-hose (especially wool combinations) previously imported from Europe.

MODEL H The ideal machine for all gauges—including 70 gauge—of infants' and children's anklets, half-sox (plain or striped) and full length ribbed hose—excelling in production and simplicity of operation.

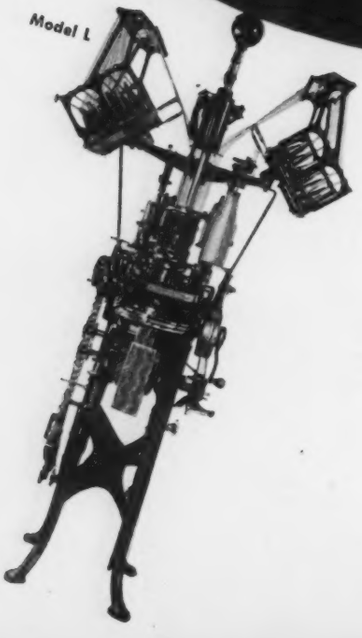
KOMET Built in all diameters and gauges (as fine as 3¼" 240 needles) required to produce any combination of ribs in sox and legs of ribbed-to-the-toe hosiery.

STANDARD-TRUMP

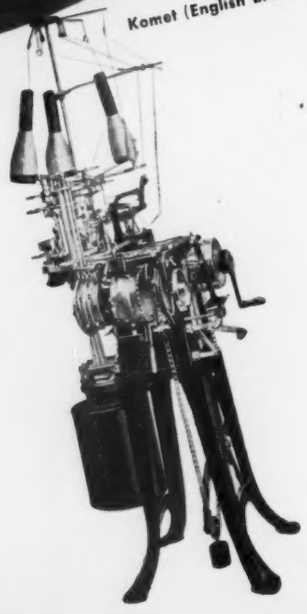
BROS. MACHINE CO., INC.

260 Broadway, New York, N. Y.

STANDARD TRUMP Established 1872



Model L



Komet (English Broad Rib)

KNITTING SECTION

Plans to Hold Hosiery Code Benefits

THE conference of manufacturers of hosiery held at the Hotel Waldorf Astoria, New York, on June 14 for discussing problems arising from the decision of the United States Supreme Court declaring the NRA unconstitutional, was the most important gathering of hosiery manufacturers since the World War period. The meeting, having a reported attendance of around 80 manufacturers, was held under the auspices of the directors of the National Association of Hosiery Manufacturers, and was representative of every branch of the hosiery industry, practically every manufacturing center, and plants of all sizes as measured by the number of machines in place. The attendance embraced employer members of the late Code Authority and directors of the National Association; executives and directors of the Southern Hosiery Manufacturers Association, the Full Fashioned Hosiery Association, Inc., the Full Fashioned Hosiery Manufacturers of America, Inc., and the Woolen Hosiery Institute of America, Inc. Other manufacturers present were those who, under the recent code, had served on branch advisory committees.

The personnel of the gathering was perhaps more important and more indicative of the attitude of the industry toward the purpose of the meeting, than the action taken, as officially reported. Actual results will not be made apparent until members of the hosiery industry have been heard from on a proposal of the conference that a form of agreement be submitted by which the manufacturers will voluntarily bind themselves until April 1, 1936, to voluntarily:

1. Continue in effect the major hours and wages provisions which were in force at the time of abandonment of codes, including the undertaking not to employ minors under 16 years of age.
2. To supply monthly statistics.
3. To conform to those two fair trade practice provisions of the recent code which relate to the marking of the quality and the content of the merchandise.

The proposed agreement to be submitted to the industry membership provides that it *shall be binding on the signatories thereto* upon notice that 75 per cent or more of the "companies" of the industry, representing 80 per cent or more of the capacity of the industry, have become parties thereto. Power to submit the proposed agreement was delegated by the conference to the National Association, whose officers are to promptly take steps for effectuating the program agreed upon by the conference.

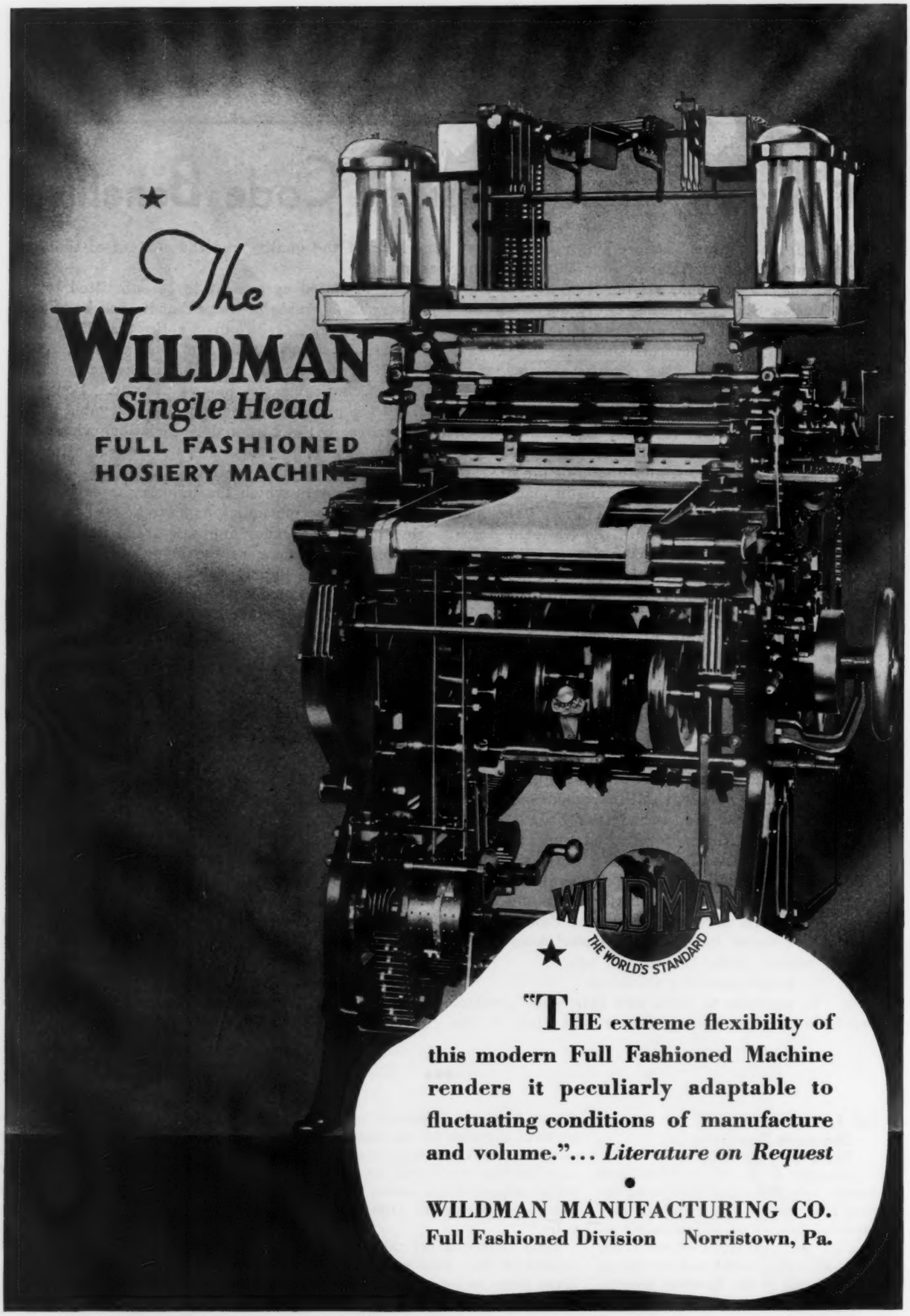
The extent to which the industry is expected to approve the recommendations as to hours and wages provisions, child labor and fair trade practices, is believed among some of the manufacturers at the conference to be indicated by the showing obtained from mills in response to an inquiry from the National Association office. The association reports that, following the decision of the Supreme Court, code standards were reported having been abandoned in 47 of a total of 807 plants. In 25 cases the reports were found to be unwarranted, eight concerns after considering abandonment of the codes decided to abide by them, and of the remaining cases, five mills had actually abandoned the wages and hours standards, five were under investigation and four "were unimportant".

The American hosiery industry is at the crossroads where may be decided the question whether there shall be a rallying to the standard of an indicated large majority; a division, the stronger element exerting an influence on the weaker group for 100 per cent accord in a program as outlined at the conference of June 14, or a scrapping of the whole structure as planned by an apparent majority as indicated by sentiment. Official information of developments will have to come from the National Association of Hosiery Manufacturers.

Full Fashioned Hosiery Shipments Surpassing Those of Year Ago

Shipments of women's full fashioned hosiery from American mills during the first four months of the current year exceeded those of the corresponding period of last year by 1,007,000 dozen pairs, according to the monthly statistical bulletin of the National Association of Hosiery Manufacturers, published June 6. Shipments of men's seamless half-hose for the same period exceeded those of the corresponding period last year by 574,000 dozen pairs, while shipments of anklets exceeded those of a year ago by 1,045,000 dozen pairs.

Total shipments for the first four months of this year were 36,267,000 dozen pairs, as compared with 34,951,000 dozen pairs a year ago, an increase of 1,316,000 dozen pairs. The gain was made largely during the first two months of the year, shipments of other types running slightly behind those of a year ago. Women's full-fashioned hosiery shipments during March and April were also somewhat in excess of those of the corresponding months of last year, but the gains were smaller than those registered during January and February.


The
WILDMAN
Single Head
FULL FASHIONED
HOSIERY MACHINE
WILDMAN
THE WORLD'S STANDARD
"THE extreme flexibility of this modern Full Fashioned Machine renders it peculiarly adaptable to fluctuating conditions of manufacture and volume."... Literature on Request
WILDMAN MANUFACTURING CO.
Full Fashioned Division Norristown, Pa.

Winners in Chattanooga Golf Contest

THE sixth annual golf tournament of the Chattanooga Yarn Association, conducted by yarn and equipment salesmen of the Chattanooga district with knitters and other users as guests, was held on May 23 and 24. The tournament this year was in charge of W. S. Lawson, of Standard-Coosa-Thatcher Company, as general chairman. G. S. (Bud) Johnston, of Textiles, Inc., was in charge of the prizes. Dudley Bryan, of Tubize-Chatillon Corp., was chairman of the golf committee.

The Bob Smith trophy, for which only textile manufacturers living in the city of Chattanooga are eligible, was won by Talley Johnson of Davenport Hosiery Mills, with a net score of 139. He keeps the trophy for one year, and in addition, he won a silver tray donated by Walter Forbes and Ruby Cotton Mills, which he retains permanently.

The yarn men's trophy was won by Jim Huff, Jr., of Rockwood Mills, with a net score of 130. He keeps the trophy for one year, and, in addition, he selected a silver pitcher, donated by Benton Dabbs, which he retains permanently.

There were two days of golf. Other prize winners follow:

Low net, first day, W. B. Longley, score, 60. Prize: cocktail set given by Oscar Heineman Corp. Second low net, first day, Bob Davis, score, 63. Prize: silver set, given by Tubize-Chatillon Corp.

Low net, second day, Henry Gilman, score, 66. Prize: silver tray, given by Duplan Silk Corp. Second low net, second day, score, 67. Prize: iron clubs, given by Gate City Cotton Mills.

The following prizes were donated on the basis of total net scores for both days:

Name	Score	Prize	Donated by:
Norman Illges	136	Golf bags	Industrial Rayon Corp.
J. W. Gilliam	138	Cocktail set	Textile Banking Co.
H. A. Vestal	138	Golf bag	Tom Moore
Wilbur Lawson	139	Toaster	Ellis Crumbliss
Gene Shea	139	Gladstone bag	H. Brinton Co.
Bragg Comer, Jr.	139	Sugar and Cream	Central Franklin Process Co.
Robert Mann	140	Bag	Dupont Rayon Co., Inc.
Reid Maynard	140	Cocktail shaker	Aberfoyle Mfg. Co.
Fred Robinson	140	Silver entree	Paramount Tex. Mchy. Co.
C. H. Corbett	140	Money credit card	Charles B. Paulus
John Fowler	140	Clock	Am. Yarn & Proc. Co.
Henry Bryan	141	Radio	Johnston Mills
George West	142	Thermometer	Smith Drum Co.
G. S. Johnston	142	Electric clock	Scholler Bros.
C. D. Gray	142	Wine set	John Lovell
Guy King	142	Cocktail cups	Gunze Silk Corp.
Frank Cater	142	Cocktails	Standard-Coosa-Thatcher Co.
Gus Bryan	143	Silver tray	Textiles, Inc.
Ben Dabbs	143	Silver vase	Fidelity Machine Co.
Frank Dudley	143	Golf ourfit	Dixie Mercerizing Co.
Joe Callicott	143	Thermos jug	Scott & Williams, Inc.
John Kane	143	Watch	Kaumagraph Co.
R. P. Shapard	144	Office console	Quaker City Chem. Co.
French Campbell	144	Thermos jug	Standard-Trump Bros. Mch. Co.
J. P. Rickman	145	Bobby Jones woods	Torrington Co.
Dudley Bryan	145	Desk set	Dixie Throwing Co.
Clyde Pierce	145	Humidor	Celanese Corp. of America
Joe Morton	146	Comb and brush	Permutit Co.
Robert Baker	146	Bath set	Ingram Mfg. Co.
Walter Toy	146	Silver tray	COTTON

"Sales Innovations" May Affect Hosiery

MANY of the more important manufacturing units in the hosiery industry are watching results from merchandising innovations as launched by some of the department stores. Somewhat recent "stunts" include sales of men's clothing on installment plan and the offering of a discount on cash sales.

The Strawbridge & Clothier department store selected last month for a try-out of the discount plan, with not altogether pleasant results. The plan provides for a two per cent discount for cash and one per cent on invoices paid within 30 days. Almost the moment it was announced in display advertising, antagonism to the plan developed among department stores and specialty shops, some commentators being disposed to regard it as a species of price cutting. This seems to have been the view taken by the producers of two lines of merchandise sold by the Strawbridge & Clothier store, announcement appearing about the middle of June that the Goodall Co. had taken its Palm Beach line out of the store, on account of alleged price cutting under the store's two per cent shoppers' bonus plan. At the same time announcement appeared of the withdrawal of a line of mechanical refrigerators from the store, allegedly for the same reason. An opinion heard in merchandising circles is to the effect that the store's shoppers' bonus arrangement constituted price cutting. Furthermore the question was raised whether, in offering the cash bonus, the store was not inaugurating a policy calculated to cause regrets later.

The Strawbridge & Clothier store, it will be recalled, sold silk full-fashioned hosiery during the Easter shopping period under an unconditional guarantee by which purchasers might return stockings within six months from date of purchase if dissatisfied with any of the essentials in perfection. A similar guarantee previously had been given by the Snellenburg Department store, with this difference, that there was no time limit set upon the privilege of return of the goods. This privilege did not of course apply to a given period for which the stockings might be worn. Under a similar guarantee of men's hosiery it is stated by the Snellenburg Co., not a single pair of 29-cent stockings has been returned during a period of more than six months in which the guarantee system was in effect.

The opportunity to buy men's clothing on the installment plan originated with Gimbel Bros. in their New York store. It has been variously criticized and it seems doubtful that the plan will be continued. In any event, it is held, it will not be adopted by the large exclusively men's clothing retailers. The idea was, using a $25 suit for illustration, to have the customer pay $5 at the time of making the purchase and the remainder in equal installments running over six months.

These several merchandising stunts are cited as indicating that before the pre-code status quo in the hosiery industry has been restored, there will be many attempted innovations for a proposed increase in sales.

It is pointed out by commentators that whether it be a bonus for cash payments, selling destructible goods on installments, or guaranteeing hosiery, this lure will be paid for by the consumer. In fact it is the boast of a very successful hosiery manufacturer that by guaranteeing his product to the store he is able to maintain prices that are more profitable than in the regular way of doing business, notwithstanding hosiery guaranteed by the store is returnable to the manufacturer.

Economic depression and measures for recovery is the parent of action for discouraging price-cutting under plant operations since the passing of codes supported by the late NRA. For illustration, it is noted that the Bergey Hosiery Co., Souderton, Pa., promptly after the Supreme Court ruled the NRA out, notified its suppliers of silk, yarn and other commodities used in the manufacture of hosiery that if they took advantage of the Supreme Court decision for reducing wages or increasing hours, these suppliers might as well remove the name of the Bergey Co. from their books as customers. In another case where it was intended to increase hours, with a corresponding increase in wages, a large consumer of yarn notified the producer that if such change were made, the yarn concern's salesmen would not be received by the mills' buyer.

For the highest perfection in stockings or for practical operation on a volume basis, the key to profitable production lies in the performance value of good needles. That we are America's largest producers of Spring-Beard Needles and that nearly all manufacturers of fine quality silk stockings are standardized on Royersford Needles is a tribute to reliable workmanship.

The prescription for better knitting

ROYERSFORD NEEDLE WORKS, INC., ROYERSFORD, PENNSYLVANIA

Southern Office: Provident Bldg., Chattanooga, Tenn. • Louis Hirsch Textile Machines, Inc., Special Representatives

ROYERSFORD NEEDLES

More about Using Left-Twist Silk in Hosiery—and Silk Yarn for Seaming

EDITOR COTTON:

I note that "CONTRIBUTOR NO. 6386" would like to see some discussion in "KNITTING KINKS" on the matter of using left-twist silk for full-fashioned hosiery and its advantages; also a discussion on using a silk yarn for seaming instead of a cotton yarn.

For the contributor's information, I might say that some months after our installation of three-carrier attachments for making so-called ringless hosiery, we tried out left-twist silk with the idea in mind of trying to eliminate "washboards". We tried this out in 3-thread, 20 turns and 4-thread, 15 turns, using two bales of each size thread. The test was made on 24-section machines, using 12 sections for left-twist silk and 12 sections for right-twist silk. For one month we observed the running of the silk from the cones, the matter of whether the fabric from left-twist silk was better than the fabric from right-twist silk, and also dyed various lots of hosiery made from both left and right twist. Our conclusion was after making all these tests that there is nothing about a left-twist that would be an advantage over a right-twist silk. We had just as many so-called "washboard" stockings in the left-twist silk as we had in the right-twist silk and as far as the finished knitted fabric was concerned no one could pick out the stockings made with left-twist from those made with right-twist. I believe that the reason some manufacturers started using left-twist silk was with the same idea in mind as we had, namely that it would help to eliminate "washboard" effect in so-called "ringless hosiery" and I am sure that if the contributor will make a test, such as I described, that he will find that left-twist has no advantage over right-twist.

Regarding the use of silk yarn in place of cotton yarn for seaming, this is not a new idea and I believe that some time or other every manufacturer has tried using silk yarn for seaming.

However, the majority of manufacturers who try silk yarn for seaming will eventually go back to cotton yarn because of the fact that stockings seamed with silk yarn do not wear well, especially in the high splicing and heel, and the result is that the complaints and returns of hosiery because of this defect cause them to change back to cotton yarn for seaming.

The only advantage I see in using silk yarn for seaming is that one can secure a finer seam with silk yarn than with cotton yarn. In the very fine chiffons, such as 2-thread and 3-thread chiffons the use of silk yarn for seaming is desirable because of the fact that it makes a finer and smoother seam and the seam is not so bulky.

In using silk yarn for seaming on the finer chiffon hosiery, I find that less complaints are received when using a silk yarn made with left and right twist. By this I mean that the silk yarn should be twisted on the "grenadine" principle. This method of twisting seems to wear better and in the seaming operation the silk does not kink when leaving the cones and entering into the hook and needle of a seaming machine.

However, I would suggest to the contributor that if he intends using silk yarn for seaming that he conduct wearing tests before allowing stockings with silk yarn seams to go to the customers, because many manufacturers in the past have suffered a loss of business through silk yarn seams not wearing well before they found out their mistake.

The seaming machine manufacturers have in recent years made many improvements to obtain a fine seam in full-fashioned hosiery and I feel that because the only advantage of using silk yarn for seaming is that it makes a finer seam, that it would be better to use cotton yarn for seaming that we all know will wear better and devote time to the adjusting of seaming machines to obtain the same fine seam on chiffons that would be made when using silk yarns.

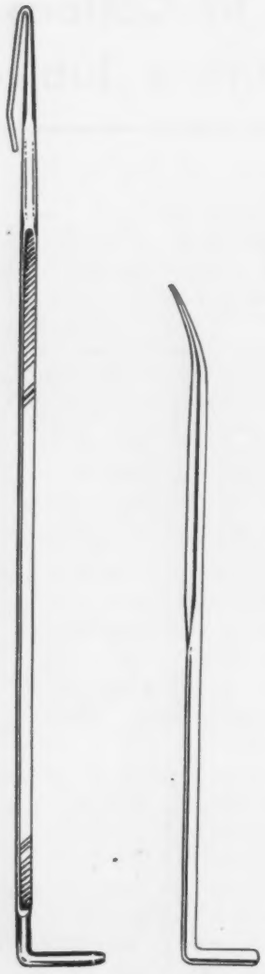
CONTRIBUTOR NO. 6397.

◆ ◆

WE invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given, but will be held in confidence and a pen name substituted when printed. All acceptable contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆

In a 40-hour week the new READING high-production twenty-four section forty-five gauge full-fashioned knitting machine produces nearly sixty per cent more volume and more than seventy-five per cent more value than the ordinary eighteen-section thirty-nine gauge machine.



READING Needles and Points . . . developed by the makers of Reading Machines particularly and exclusively for service on Reading Machines. **Tested**—from wire to finished product.

TEXTILE MACHINE WORKS, READING, PENNA.

READING

SPRING BEARD NEEDLES

How to Prevent Streaky Dyeings and Curling on Balbriggan Cloth?

EDITOR COTTON:

I would be glad to have some of your readers discuss the following questions:

In the wet processing of cotton balbriggan cloth and mixtures of rayon and cotton, what method would you use in the bleaching of the fabric prior to dyeing light shades? We are having difficulty with streaky dyeings on this type of cloth and are of the opinion that our bleach bottom may be the source of our trouble.

We are also having trouble with the curling of the fabric in the finishing department prior to sewing the garments and would appreciate any suggestions concerning that trouble.

I hope your readers will discuss these particular questions and any other points they may suggest in detail.

CONTRIBUTOR NO. 6392.

Helpful Hints on Standard Knitting Machine Fixing

(Editor's Note—This is the tenth of a series of articles discussing the parts of Standard knitting machines and giving helpful, practical suggestions on fixing them. The first article appeared on page 129 of April 1934 and gave a history of these machines. The second article, on page 127 of May 1934, covered the parts shown on Plate I in the Standard catalog. The third article, covering Plates 2, 2A and 3, was on page 105 of the July 1934 issue. The fourth article, covering Plate 4 and 5, was on page 101 of the September issue. The fifth article, page 105, November issue, covered Plate 6. The sixth article, on page 107, January 1935 issue, covered Plates 8, 9, 10, 11 and 12. The seventh article, page 111, March 1935 issue, discussed Plates 13 and 14. The eighth article, page 134, May issue, covered Plates 15, 16, 17, 18 and 19. The tenth article, covering Plates 20, 21, and 22, appeared on page 125 of the June issue.

The numbers in parentheses following the names of parts are the numbers used by the machine manufacturers for the various parts. It is suggested that the reader refer to the plates in question in the Standard catalog in reading these discussions, and that he clip these articles and file them in the catalog with the various plates for further reference.)

Standard Plates 23 to 24 A Inclusive

The Two-Feed Attachment

EDITOR COTTON:

A general view of the two-feed attachment is shown on Plate 23. Other parts which are used in connection with it are shown on Plates 23A, 24 and 24A. This attachment was among the first major devices to be developed for the plain H machine and was used extensively when it was first brought out. It is by no means a complicated device; however, a careful study of the complete attachment will reveal that much work had to be done, many difficulties had to be overcome in order to produce this device.

The bulk of the device is controlled by lever (K-246) which is pivoted on the sleeve (K-2599). Lever (K-246) is operated by a cam ring which is attached to the under side of the pattern disc. The additional feed finger (K-2568) is attached to the post (K-2589) with pivot screw (C-1671); a hole and a narrow slot in the latch ring are provided to permit the finger and additional yarn to be lowered into knitting position.

The additional feed finger is controlled by a plunger in the upper end of the plunger arm (K-109) which is attached to the lever (K-246) with screws (C-982). The pin (K-838) is placed immediately next to the slot in the latch ring. It guides the yarn when the finger goes down and acts as a stop to help control the yarn when the finger comes up. In order to knit on two feeds it is of course necessary to raise the needles high enough to permit the latches to shed the loops immediately after the needles leave the regular left-hand end cam. The clearing slide and cam are provided for this purpose and are placed directly in front of the back half in the space normally occupied by the needle removal gate or filling-in piece. The extra stitch cam and slide adjoin the clearing slide; both slides are held in position by the plate (K-186) and screws (K-1941).

After the needles have passed under the extra stitch cam they are again raised to the normal level by the two-feed end cam which is attached to the front half. This cam is shown on Plate 23-A. The two extra slides just mentioned are also shown fully assembled on this plate.

The extra feed stitch cam is provided with an adjusting screw (K-2159) which permits matching the length of stitch drawn by this cam with that of the regular left-hand stitch cam, thus maintaining uniformly knit fabric.

Adjusting screws and pull-in springs for both slides, a clearer view of the latch ring and two-feed finger and various details of the back half are also shown on Plate 23-A.

The two-feed attachment was used mostly to knit five-eighths or seven-eighths length goods in both ingrain and dip-dyed numbers; the additional feed helped to increase the production on such numbers materially.

Plate 24

Plate 24 shows both front and back halves as used with the two-feed attachment. These are identical with those on single feed machines with two exceptions. It will be noticed that the stitch cams are somewhat higher just above the upper screw holes and the top cam is ground out to correspond with the slight hump on the stitch cams. The complete sinker dial cap with extra sinker cam is shown on Plate 24 also. Sinker cam adjustments are made in the same manner as on single feed machines, the extra sinker cam should be set in the same relation to the needles as the regular sinker cam for best results. Adding an additional feed of course made it necessary to supply an additional yarn clamp and cutter. The old style clamp and cutter are shown on Plate 24; the new style auxiliary clamp and cutter are shown on Plate 24-A in both detailed and assembled forms.

In the June issue of COTTON the writer promised to have some information about several *new* attachments for Standard H machines. So without any ifs

or buts, let's have a look at the new double sole evening attachment.

New Double Sole Evening Attachment

Figure 1 shows the complete attachment mounted on the back half. It consists of the following parts: A new left-hand stitch cam, a new top cam, a new guard cam and a jack raising cam. The dotted lines in-

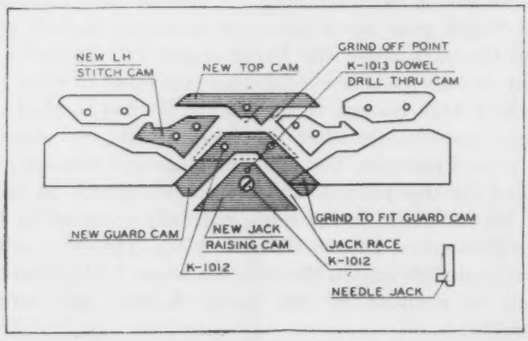


Fig. 1. New Double Sole Evening Attachment for H.

dicate the old guard cam and top cam. It is necessary to grind off the point of the old right-hand stitch cam as indicated in the sketch to permit the needle butts to pass between the stitch cam and the new top cam. The point of the new left-hand stitch cam is somewhat higher than on the old cams to make sure that it will draw the needles down which have been elevated by the jacks. Three jacks are usually placed under the first three long butt needles on either side of the cylinder, at each revolution of the cylinder the jacks are raised by the jack raising cam and are lowered by the guard cam; the space between the two cams just mentioned forms a race for the jack butts to ride in. It will be noted that the new top cam has a longer point than the old cam; all needles are thus drawn down until the butts rest on the top surface of the new guard cam. The six needles having jacks under them are raised again about ⅛-inch immediately after they pass the point of the top cam. The double sole yarn enters and comes out on the elevated needles. When the double finger goes down the yarn does not drop into the needles but floats just over the hooks of the needles which are running at the lower level, and the first elevated needle takes the yarn. When the double sole finger lifts out, the yarn is lifted into the hook of the last elevated needle.

There are no ifs and buts connected with this device; once the double sole cams and finger are properly adjusted the double sole yarn will enter and come out in a perfectly straight line on either side. Better double sole plaiting is also assured with this device.

The double sole evening attachment was first presented to the trade at the 1934 Knitting Arts Exhibition. There has been a need for just such a device and in the writer's opinion this need has been filled in a most satisfactory manner. Skeptical buyers of seamless goods demand quality plus neatness; if there is any one thing that destroys neatness in seamless hose it is a ragged or irregular double sole line on either side. There are no half way measures; it's either right or wrong. Even the expert machine fixer will find it not only difficult but next to impossible to keep the double sole in a perfectly straight line on either side unless his machines are equipped with a device which was built for this purpose. He will be forever tinkering with his machines, and by the time he gets one fixed he will find two more waiting for him.

The double sole evening attachment does away with tinkering and gives the fixer a chance to really fix his machines. The double sole evening attachment can also be used to good advantage in connection with the horizontal striping attachment. By placing jacks under a few needles in the center of the short butt, all yarn changes can be made in a perfectly straight line and each machine can be made to produce a yarn change lap of a given width. This will not only save the fixer a lot of hard work, but will also simplify boarding of striped numbers, speed up pairing and add much to the neat appearance of striped goods. The device can be applied to any Standard H machine; it gives very little trouble and will more than pay for its initial cost in a very short time.

New Double Sole Slackening Attachment for Standard H Machines

Those interested in Standard H machines are well acquainted with the old double sole slackening device, the cylinder vibrating method. This device was satisfactory in every respect, with one exception: it was impossible to slacken the stitches only on those needles which would knit the double sole. The slackening would overlap into adjoining needles on either side.

The new attachment was first shown to the trade at the 1935 Knitting Arts Exhibition. Slackening is accomplished by sinker action in a manner similar to that employed on Scott & Williams machines. Instead of using high and low butt sinkers, narrow and wide butts are used.

The complete device with sketches of the wide and narrow butt sinkers is shown in Fig. 2. The wide butt sinkers do the slackening and are placed between the needles which knit the double sole; narrow butts are placed between the remaining needles. The attachment operates in the following manner:

Two cams (K-4771) are attached to the side of a yarn change block, one for the high splice and one for the sole. The bracket (K-8527) is attached to the top of the machine frame and the lever (K-8528) is pivoted on the bracket. When the high splice and sole are being knit, the lower end of lever (K-8528) comes in contact with the operating cam (K-4771), and this causes the upper end of lever (K-8528) to move inward toward the sinker cap, and brings the adjusting wire (K-8529) against the slackening lever (K-8042).

The lower end of lever (K-8528) is provided with an adjusting screw (K-2189) which rides against the operating cams (K-4771); adjusting screw (15776) acts as a stop for lever (K-8528) when it is pulled outward by the spring (10339). The slackening lever (K-8042) as shown on the sketch is a thin blade of steel which fits into a slot in the side of the sinker dial cap; and it is pivoted on the screw (K-855). The tail of the slackening lever (K-8042) rests against the dial cap when the lever is out or inactive, thus form-

MACHINE-MADE MEANS

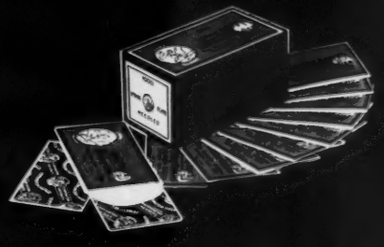
Uniform Bend of Crimp (Knee)

Every good knitter knows that uniform needles are essential for uniform knitting. But how does the needle maker insure uniformity? Here is a method that should interest every manufacturer of knitted fabrics . . . and every man whose job depends on the smooth functioning of needles.

Here at Torrington we employ machines to insure uniformity. The needles are planned from blue prints . . . and every detail is carried out with precision.

Even in such a seemingly unimportant detail as the "knee" or the bend of the crimp, where the angle must not be too abrupt, nor too gradual, but exactly right, machine accuracy is applied. Because of the extra accuracy in this factor, the likelihood of lessened beard opening is reduced, and no undue strain is exerted on the beard during the pressing of the presser bar.

The precision of machines offers a distinct advantage in maintaining uniformity in details like this. Because the whole process in making Torrington needles is controlled by machines, they have gained an enviable reputation among good knitters the world over — for high quality and long service.



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1 Every job handled by experts with special modern equipment.

2 Each job kept intact on an individual truck throughout the process.

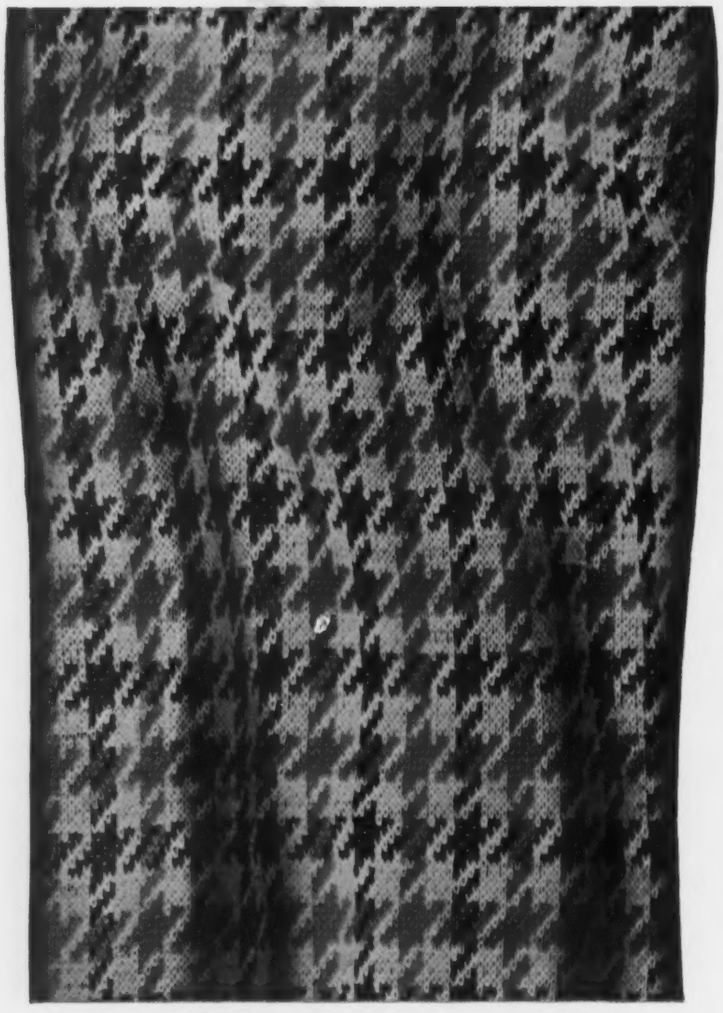
3 Bars are washed in a special fluid; scrubbed with revolving brushes.

4 Bars are straightened with a special device; brasses resurfaced; slots checked mechanically.

5 Bars filled with Torrington needles; straightened and gauged three ways; spaced also — by gauge.

6 Beards raised uniformly; checked by gauge for height and central setting.

TORRINGTON Spring Beard NEEDLES



A BEAUTIFULLY knitted fabric reflects credit on your machines, your needles and the skill of your operators. It means that you have exercised care and good judgment in the selection of your "tools" and the men who use them.

Good needles are essential to good knitting. The more careful you are in the selection of your needles the more certain you are of getting smooth, even knitting results.

Good knitters like to use Torrington needles. They know that Torringtons last longer... that they are strong, smoothly finished, uniform. Torringtons can be depended on because every detail in their manufacture is controlled with scientific accuracy—to insure *uniform quality*. They will help you put *uniform quality* into your fabrics. We invite you to try them.

GOOD KNITTING OWES MUCH TO *Good Needles*

The Torrington Company
ESTABLISHED 1866
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THE TORRINGTON COMPANY,	1640 FAIRMOUNT AVE.,	PHILADELPHIA
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TORRINGTON *Latch* NEEDLES

ing a stop. The inward movement of the slackening lever (K-8042) is controlled by the adjusting screw (15346).

Slackening is accomplished by the lever (K-8042) moving the wide butt sinkers in somewhat earlier than they would be normally moved by the regular left-hand sinker cam. To permit earlier inward movement it is necessary to hollow out the regular left-hand sinker cam as shown at *A* in Fig. 2. Best results will be obtained by adjusting the lever (K-8042) so it will move the wide butt sinkers in only as deep as the narrow butts are moved by the regular left-hand sinker cam. Should this adjustment make the double sole too loose, it can be tightened as desired by running in on the adjusting screw (15346). The right and left sinker cams are adjusted in the regular manner; these should be properly set first before making adjustments on slackening lever (K-8042).

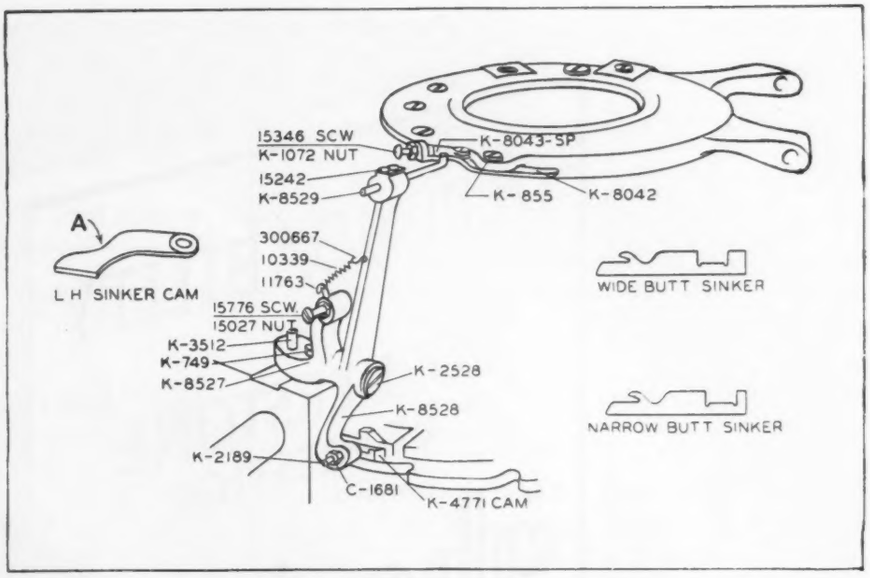


Fig. 2. The New Double Sole Slackening Attachment for H Machines . . .

The new double sole slackener has several other advantages. Better double sole plaiting can be obtained especially on either side where the sole yarn enters and comes out. This is made possible by the sinker action on the stitches. By being able to control the degree of looseness of the sole, tighter insteps can be knit, thus better-fitting goods can be produced. If the owner of Standard H machines will equip his machines with the two new attachments described in this installment he will have everything that is new and up-to-date along this line.

MARTIN A. SHAW.

Making the Knee-length Elastic Top Hose

EDITOR COTTON:

I would like to give in this letter some information concerning the manufacture of the new knee-length elastic top hose. We are making this type of hose on 300-needle 3½-inch Model K machines. We make it with a 60s/2 combed peeler mercerized up to the anti-run-back. For the leg and foot we use a 7-thread silk; for the French heel, a 3-thread silk; for the double sole, 100s/1 combed peeler mercerized and 60s/2 combed peeler mercerized for the heel and toe. We make this hose as a regular hose except without a welt. When the hose is completed we split the stocking up the seamer mark to the heel by the use of scissors. In the next operation we put the Lastex on by means of the looping machine. We loop the toe by the same operation. The work then goes to the seamer where it is seamed like a full-fashioned hose. In making this stocking we had some difficulty in getting a loose course loose enough for the looper, and the following is the way we overcame it:

First we made the make-up in the usual way except without the use of a transfer dial. Then on the first drum move after the make-up we backed up on the tension screw No. 15090 that is placed in the drum cam No. 5217 as far as possible to make the stitch loose for looping. We make a few courses in this manner. On the next move of the drum which is used for making the transfer, we used this move to make four courses of mercerized before the anti-run-back. While making the anti-run-back, we changed yarns from mercerized to 7-thread silk.

Our machines are the five-finger type, therefore we had to design something to take the tension off of the mercerized yarn when making the loose course. We worked this device from the loop forming lever bar No. 8274, not using this bar as stated before.

I show herewith sketches of the parts used in making this device. *A* is the rod guide which is

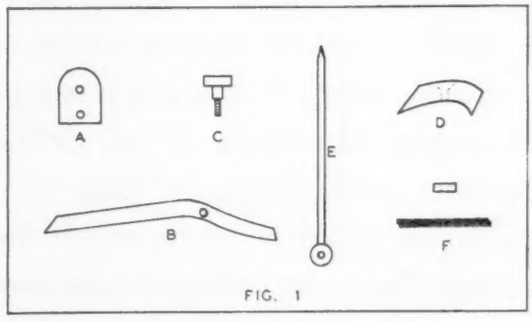
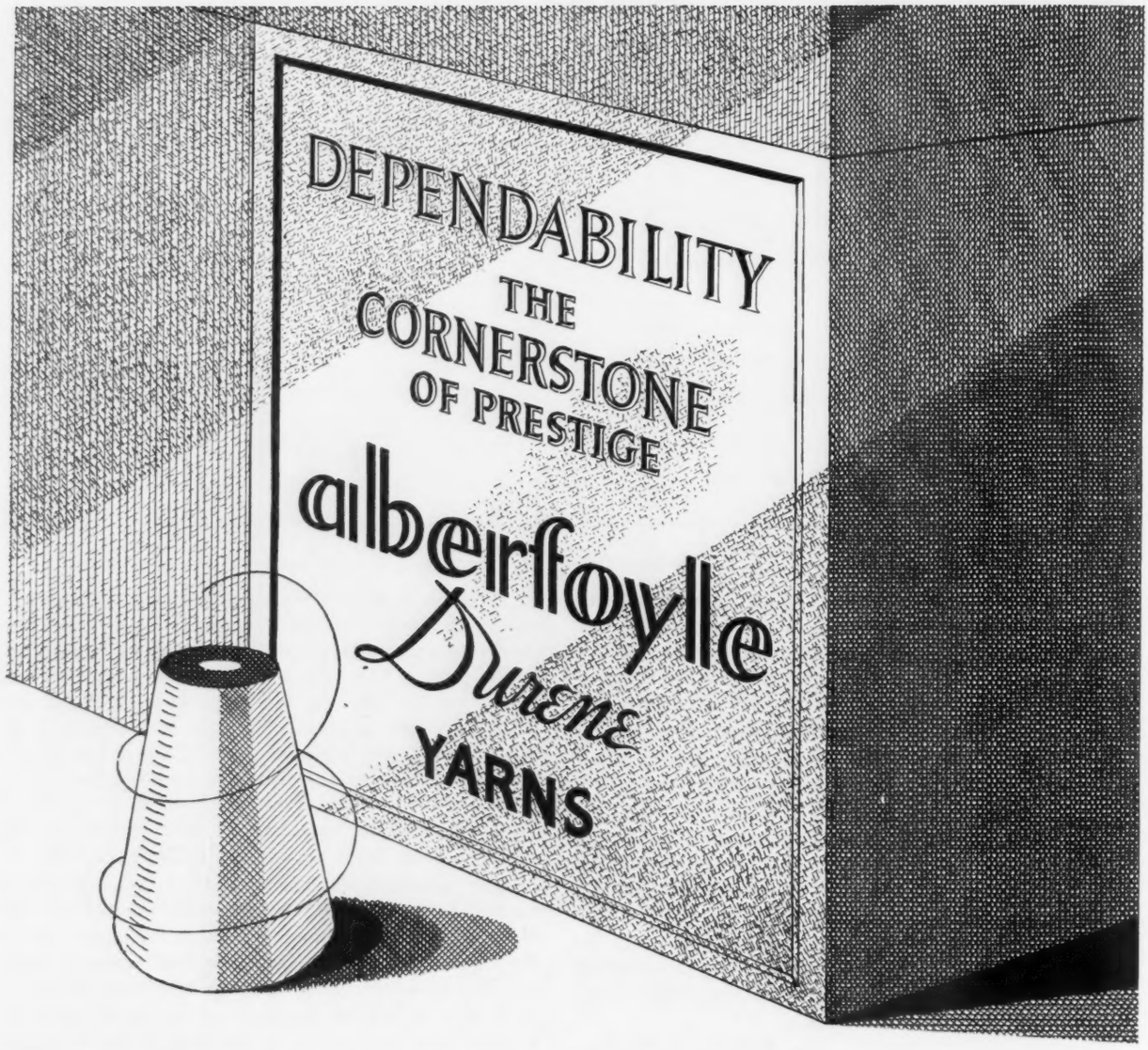


FIG. 1

made of flat iron 1x2x⅛-inch. The lower hole is drilled for a No. 8 and the upper hole is drilled for a ⅛-inch rod. The bar No. 8274 shown at *D* is drilled and tapped at the point indicated for a No. 8 screw. *C* shows the screw to be used on Bar No. 8274 and for holding the disc opening rod. *D* is the ¼-inch drum cam for operating the Bar No. 8274. We place this cam so that when making the loose course the tension disc will operate. *E* shows a side view of the



THE position which Aberfoyle Manufacturing Company occupies in the textile industry is due not only to the character of the yarns which it produces, but to its cherished reputation for dependable service. ¶ Because the name Aberfoyle is so definitely associated with security and satisfaction — manufacturers look to it for positive value and unstinting co-operation at all times, in much the same way that they look to Aberfoyle Durene Yarns for efficient performance.

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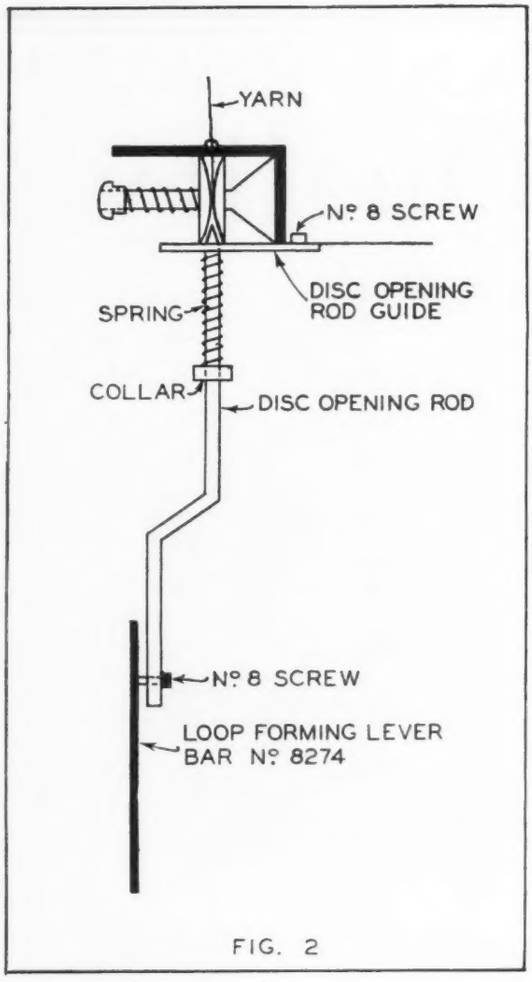

FIG. 2

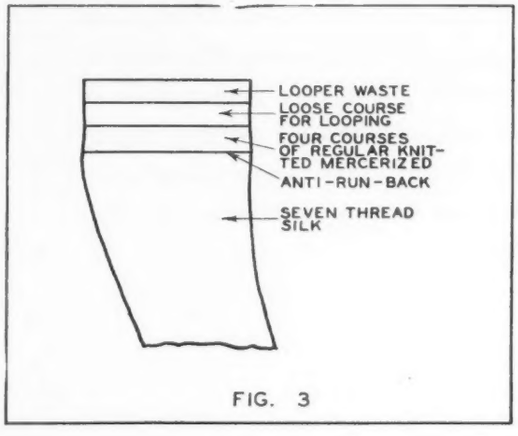

FIG. 3

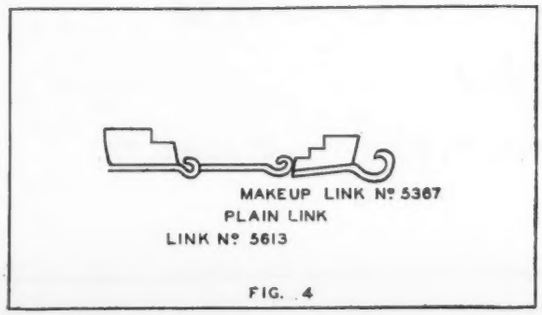

FIG. 4

rod for opening disc. This rod is made of cold rolled steel, ⅛-inch in diameter. *F* shows the collar for the disc opening rod and the spring for the disc opening rod.

Fig. 2 shows the device assembled and I believe this will be understood.

When looping Lastex on, we are unable to ravel the looper waste due to the lock stitches at the make-up. We take a knitting needle with the latch broken out and insert the needle in one of the stitches when the work is on the looping machine. We then draw the one thread and off comes the looper waste. Then we put on a strip of Lastex and loop. Fig. 3 shows a sketch of how the stocking looks when knitted. Fig. 4 shows the chain set-up at the start.

CONTRIBUTOR No. 6375.

Discussion About "Heavying" Stocking By Removing Chain Links and Loosening Stitch

EDITOR COTTON:

I note the rather unusual though interesting experience related by "CONTRIBUTOR No. 6381" on page 137 of the May issue of COTTON under the title "A Seamless Knitting Problem". He states in substance that two old-time machine fixers claim they have actually made a rayon seamless ladies' hose "heavier" by removing chain links and loosening the stitches. According to the old timers it can be done if "enough" links are taken out of the pattern chain and the same length hose made out of the same denier rayon. "CONTRIBUTOR No. 6381" does not agree with the old timers and proves beyond a doubt that they are wrong. He states that he made one stocking on a machine using the regular chain set-up and sized the stocking according to the mill's standard length over-all. He then removed ten chain links or 120 courses all told from the regular set-up, loosened the stitch so as to give the same length over-all as on the first stocking and made a second stocking. Upon weighing the respective stockings he found the first to be .07-ounce heavier than the second. "CONTRIBUTOR No. 6381" is absolutely right and the two old timers are not only wrong but, as he puts it, actually "off".

There are two factors which determine the weight of any stocking in the gray regardless of what kind of yarns are used. These are the size or count of yarn and the total number of courses knit. If the yarn count is not changed the weight of the stocking cannot be *increased* by removing chain links nor can it be *decreased* by adding chain links. The situation is simple vice versa. Perhaps the old timers could convince "CONTRIBUTOR No. 6381" if they would remove a dozen more chain links and try again. Blessed, yea thrice blessed is the mill that has machine fixers who can *increase* the *weight* of a stocking by *reducing* the number of chain links without using a heavier count of yarn. Perhaps the Japs have discovered this secret and are thus able to sell hosiery and cloth "dirt cheap" in this country.

Practical men will not agree with the two old timers, and like "CONTRIBUTOR No. 6381" will wonder how they got that idea and why.

Right you are, Mr. Editor. It's "duck soup".

CONTRIBUTOR No. 6394.

Honest Quality

PRIDE of workmanship, rhythm, and a spirit of service were in the hearts and hands of the Colonial housewives, as they sat at their whirring spinning-wheels, preparing the yarn for home-spun cloth. Every detail of this task was wrought with painstaking care, for they knew that only products of Honest Quality bring true economy and lasting satisfaction.

While methods and machinery have changed, many concerns like Boger & Crawford still take a similar pride in their honest handiwork, striving to produce honest quality which brings economy and lasting satisfaction to their users.

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THE KNIT GOODS MARKETS . .

Philadelphia, Pa., June 17, 1935.

A STATISTICAL survey of department store and specialty shop sales of hosiery in June and the extent to which they had reduced their stocks should, logically, show a radical reduction, in preparation for the July inventory. It has been the boast of department managers and buyers that buying was held down to the lowest possible volume. In the stock reduction program, some very low prices necessarily made their appearance.

An attitude of rigid conservatism, manifest in May, seemed the more pronounced in June, when, it was apparent, there was underconsumption, notably of women's silk full-fashioned. As this condition came to be more generally understood, as orders diminished in size and frequency, curtailment of production became the sharper, and was carried so far that for the time output and outgo were more nearly in balance than for eight to ten weeks. Yet the price lists of numbers of mills continued out of line with the prices entered on invoices to some of their customers.

With the NRA relegated for the time to the archives of lost arts in the process of restoring prosperity where depression prevailed, industry and commerce were hugging shore while sailing uncharted waters. In hosiery especially, the situation complicated by style, price and innovations, it appeared that some of the shrewdest executives and more capable merchandising heads and sales managements were so uncertain as to which way to turn for betterment that they chose safety first for their respective interests as related to the welfare of superiors. June, marking the end of the first half of the year, was the hardest month for the hosiery trade since the dawn of 1935.

While reductions in inventories may have appeared justified by the political and economic situation existing in June, it seemed that some establishments carried this weeding out to the danger point and beyond, for it was not overlooked that with jobbers and retailers entering the second half of 1935 with radically diminished holdings of goods, a famine of some of the more desirable selections at the outset of a new New Deal was not a remote possibility. There is one phase of the situation, as manufacturers face a traditionally lazy summer market prices for standard types of full-fashioned hosiery have seen bottom, except as relates to manufacturers inviting the shortest route out of the business of manufacturing and selling stockings. The market trend has been downward for so many weeks that a turn is inevitable, and the only direction is upward. But a return to genuine activity seems hardly likely until well along in August, in the opinion of some of the senior manufacturers in the northern field.

Figures on Knee-Length Distribution

Interest in "ringless" hosiery appears well sustained. The moderate priced stockings of this construction have continued in relatively fair distribution. A sort of community of interests feeling among manufacturers of the "ringless" is said to have made itself felt in a more nearly stable position than in run-of-mine staples of the conventional type. As manufacturers have had to realize they were trading in a price market, the season thus far has not favored campaigns in the interests of some one or more innovation distinctive in character. Results from offerings of women's short stockings of the knee-length, self-supporting variety appear less satisfactory than was predicted at their first appearance in the stores.

The more dependable statistics on knee length are contained in the June 1 issue of the statistical bulletin of the National Association of Hosiery Manufacturers. The information based on a compilation of reports of 70 manufacturers of full-fashioned knee length stockings, indicates that the total distribution in April was approximately four per cent of all full-fashioned, practically unchanged from March. Seamless knee lengths made a better relative showing, amounting to 11 per cent of total production of women's seamless. Some of the hosiery buyers for the trade of long experience predicted, when their respective departments first were offered the knee lengths, that shipments would represent around 50 per cent of women's silk stockings. Shipments in April, according to the National Association bulletin, were 14 per cent under the month's production.

It may have been too soon, in June, to attempt to gauge the future for knee lengths by the statistics for April, particularly as they had not long been before shoppers, and during adverse weather conditions at that, and manufacturers having to operate in a price market. Yet, recognizing tendency to brevity in attire and the fact that the innovation stocking eliminates the knee strain, it might appear better to adjust production of knee length to approximately the firm orders.

After gratifying success with a single welt knee-length silk full-fashioned stocking, Harrington & Waring, internationally known distributors of hosiery, is introducing a new type of stocking, of 45-gauge, knitted in a single operation and intended to sell in retail stores at $1.35 a pair. The top of the stocking contains 435 needles and measures 14½ inches. The triple heel is of 14 threads, of silk—seven threads over four, and four threads over three. Introduction of this stocking took place when the weekly production was but 150 dozens.

In view of conditions in the hosiery markets in June, with numbers of manufacturers said to be sacrificing profits in the conversion of assets into bank funds, it was believed in conference of mill chiefs that there is little danger of increases in holdings in mills; that the general tendency should be toward reductions. Some mills, it was pointed out, had suffered losses so heavy that they are no longer in position to carry stocks of goods, notably of finished hosiery. Quite a few mills knitting on commission or selling their product of full-fashioned in the gray were, at times in June, operating to absolute capacity.

New Designs Feature Half-Hose

Stocks of men's half-hose are said in the trade to have been considerably increased with the introduction of many new designs and types of construction in the expectation there still was room at the top for anything in the way of attractive innovations. Fancies never, perhaps, were available in representative stores at prices so low as at present, a result in part of bringing out new numbers that were expected to compete successfully with current styles.

Making comparison with April 1934, production of men's full-fashioned silk half-hose this year in April was increased by 50 per cent, to 13,497 dozens, while output of silk seamless amounting to 84,703 dozens, was increased by 98 per cent. In men's cotton half-hose the swing was in the other direction, production in April this year having decreased by almost 21 per cent from the corresponding month of 1934.

Celanese-rayon clocked socks in various design, of 220-needle construction, said to be from a North Carolina mill, were offered in New York for $1.50 a dozen for a promotion sale in lots of five pairs for 99 cents. This was said to be getting down to grass roots in matter of cost and retailing price.

Production Statistics

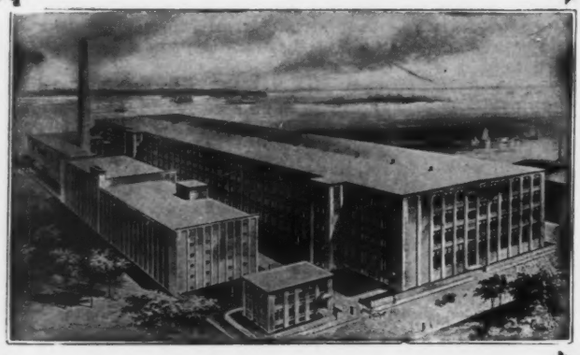
Production of hosiery, all kinds, in April, it appears from reports of 366 identical manufacturers representing 437 mills, was at that time not as sharply curtailed as had been made to appear. The reports for April accounted for only nine idle mills. More mills doubtless were idle in the last half of May and first half of June. The indicated April production was approximately 350,000 dozens less than in March, but was greater than in April 1934. April net shipments, however, were 250,000 dozens less than those for March, but exceeded those for April of last year.

Increases in April 1935 over April 1934 were in production and shipments of women's full-fashioned hosiery, and in stocks in mills, the rise in stocks amounting to around 400,000 dozens. Unfilled orders, for all kinds, at the commencement of May, were 4,698,514 dozens, a decline from 7,207,098 on the corresponding date of last year. The increase in stocks in mills from May 1, 1934, to the corresponding date of this year amounted to less than one million dozens. Unfilled April orders for women's stockings declined by approximately 27 per cent in women's full-fashioned from last year, while in women's seamless the drop was almost 50 per cent. The comparison is the more favorable as to full-fashioned as production in April 1935 was over 300,000 dozens more than in April 1934, while in seamless, the production declined, as well as shipments.

More silk and more rayon hosiery, all kinds, was knitted in April this year than in the corresponding month of 1934, while output of cotton stockings, all classes, declined from 1,807,179 dozens in April 1934 to 1,408,817 dozens in April

Quissett Mill

New Bedford, Mass.



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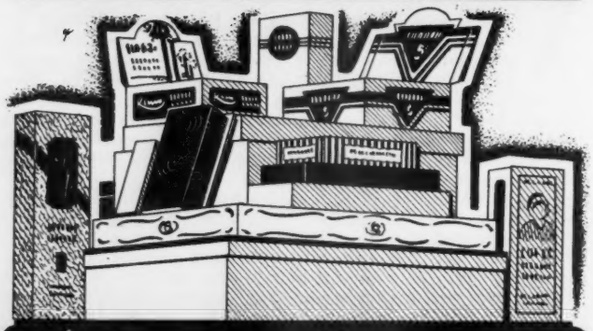

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this year. This might appear to indicate that both silk and rayon are low enough in cost to compete with cotton, including mercerized, even in what often is referred to as a price market. Declines in use of cotton stockings is indicated in the entire range with the exception of men's full-fashioned, infants, and athletic lines. Output of cotton and rayon in combination declined from April a year ago in practically all classes, notably women's seamless and misses' and children's. Declines in the two latter lines were offset by gains in pure rayon construction.

Suits Planned on Ringless

It is intended that the trial of the first American suit over alleged infringement of the Kaufman patent of an invention for knitting ringless full-fashioned silk stockings will take place probably in November, according to statements obtained from officials of the Textile Patents Corporation. Several infringement suits were filed in the United States against American hosiery mills on charges of infringing the patent, and suits are pending in Canada. It was the hope of the hosiery trade to procure official information at an early date as to the validity of the Kaufman patent, and the suits in Canada were vigorously prosecuted, to that end, by the Textile Patents Corporation. Trial of the case was set for June, but attorneys for the Canadian mills named in the suits obtained a postponement until October. In the meantime the Textile Patents Corporation has increased its list of manufacturers licensed to produce and sell hosiery made by the Kaufman attachment process to 120, and it is now in the early stages of a campaign against alleged infringers and, has in preparation a number of additional suits for immediate filing. These actions include as defendants chain stores and retailers who are purchasing and selling hosiery that is said to infringe the Kaufman patent.

The manufacturers organized to undertake an attempt to invalidate the Kaufman patent are said to base their attitude on prior uses in the outerwear industry and in the weaving industry. This is said to have been thoroughly investigated by attorneys for the Textile Patents Corporation and it appears the consensus of opinion that there is no similarity in the problems involved in the knitting of full-fashioned hosiery and problems encountered in outerwear and weaving. That this seems to be accepted as a prevalent opinion is indicated in the great number of manufacturers who have adopted the new method of producing hosiery and the large sums of money spent in new equipment for the production of ringless hosiery. A number of foreign countries have issued patents to Kaufman, Germany and Spain being among the more recent to grant patents. It is officially stated that the invention is now being promoted in several foreign countries, where leading hosiery mills have adopted it.

The point is made by the Textile Patents Corporation that not one of its 120 licensees has taken steps to cancel the license agreement, notwithstanding the admission that the hosiery industry for some time has been regarded as in a "deplorable condition." Large sums have been paid to the Textile Patents Corporation in royalties, thus supplying it with a war chest for carrying on its prosecution of suits for infringement. The Corporation has taken steps to more fully inform wholesalers and other hosiery buyers for the trade as to the patent situation. Thousands of letters have been mailed to the retailing trade directing attention to developments in the protection of licensees, in order that dealers may safeguard against the commission of infringing acts which might subject them to suit for damages.

An Economic Study of the Full-Fashioned Situation

That the full-fashioned hosiery industry is or shortly will be working toward lower cost of production without affecting the wages paid to mill employees is an idea that seems to be taking root in the minds of some important manufacturers. A person, speaking for a group of mill executives discredits the philosophy of recovering from the depression by means of a scarcity of the things necessary in the lives of practically all persons. It is the notion of those for whom this commentator speaks that restoration of contentment after the country's economic plight calls for plenty, rather than scarcity, and that plenty carries the implication of lower costs for the necessities.

No less a distinguished economist than Dr. Glenn Frank president of the University of Wisconsin, in an accredited recent address on restriction of production, to the General Federations of Women's Clubs, is said to have aroused their convention to an enthusiastic response. He is quoted: "To me it is incredible that in a world of tragically unfilled human need we should attempt to increase welfare by destroying wealth or declining to create it. More goods at lower prices, not fewer goods at higher prices, is the only logical and socially defensible goal of an age of science and technology."

The point is made that one step in the direction of lower production costs is a reduction in the number of styles produced by a mill. One mill is cited as producing 40 styles, in at least four sizes and the range of colors. It is maintained that all things being equal as to environment, skill, etc., a manufacturer of two distinctive styles has a better show of success in the present market conditions than those with a multiplicity of numbers. In support of this premise it is stated that during the depth of the depression in the full-fashioned industry in June a few mills selling their production in the gray and, consequently not hampered by an excess of styles, were operating two shifts to plant capacity and shipping their production regularly, while in even some of the low priced numbers there were accumulations in mills producing a variety of styles.

On the theory that if every woman wearing full-fashioned stockings were increasing her purchases to the extent of but one pair a year there would be a scarcity of hosiery of this construction, basis of present outputs, this was cited in advocating the employment of absolutely modern equipment by which the quantity of hosiery produced per day is increased, to the material advantage of the mill employees.

George W. Taylor's book on "Significant Post-War Changes in the Full-Fashioned Hosiery Industry" quotes a leading southern manufacturer as saying in 1923 that there was apparently surplus production of full-fashioned hosiery. In the same book an equally prominent northern manufacturer is quoted as saying in effect that the principal cause for 1924 being an unsuccessful year for the manufacturer of silk hosiery was over-expansion in the industry.

These manufacturers told of a surplus of full-fashioned hosiery when production, according to survey under the auspices of the Industrial Research Department of the University of Pennsylvania, was approximately 13,000,000 dozens, the increase in output from 1925 to 1928 being given in a report of the survey as more than 9,000,000 dozens. Since 1928, production has increased to more than 30,000,000 dozen pairs, compared with 13,000,000 dozens twelve years ago, representing a gain of around 1,000,000 dozen pairs a year. The pessimistic forecasts of industrial leaders of 1925 hardly would be repeated now.

The full-fashioned industry does not require more machinery to attain to the production indicated as necessary for meeting demand in the event that prices be reduced to the lowest possible minimum, allowing for a reasonable margin of profit for manufacturers. What the industry does need, it is held, is equipment of the more modern type, and the elimination of policies that tend to increase rather than decrease production costs—an excessive number of styles, for illustration. Some forecasters go so far as to express an opinion that as the near-obsolete machinery shall be dispensed with, it should not be surprising if some of the better situated mills operate on three eight-hour shift schedules, this giving employment to more knitters, at current earnings per hour. This assumes that the theory of low prices and plenty will bring about an increased consumption, through, in part, establishing higher standards of living, which in themselves, increase consumer purchasing, particularly in hosiery as one of the more conspicuous items in women's attire. Reasoning along this line assumes that there would be a need for more distinctive styles for summer and winter, each, for street and evening wear and, incidentally, the injection of a few style novelties for spring and fall.

It should be easily possible to produce as good or better stockings at lower than present prices without any disturbance of the present level of wages, is the opinion of some manufacturers who are giving careful study to present conditions and needs for the future profitable production of hosiery. "Manufacturing plants," says one mill executive, "should be so equipped as to provide for a profit of at least 50 cents a dozen for the manufacturer, whereas, it will be recalled, there was a time shortly before the termination of the World War when profits of $3 per dozen were possible."

Consumption of silk hosiery at that time was relatively greater per capita than at present, for the reason that there was a greater purchasing power and little care among a very large element of society as to expenditures. That same element would "buy silk hosiery furiously," it is suggested, if prices were at this time as low, in proportion with purchasing power, as they were high at that time.

What might be the effect on women's seamless silk ho-

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siery if prices for full-fashioned were made radically more attractive it would be difficult to conjecture. The point is made, however, that in several Pennsylvania establishments operating both full-fashioned and seamless plants, the seamless equipment during June was in production while the full-fashioned machines were idle, indicating it is suggested, that the hosiery industry is adapting itself, for the present, to a low-price market.

It transpires that some of the machines for producing low-priced full-fashioned are idle because of the fact these machines are of low speed and two sections and therefore cannot compete with the more modern. This refers more specifically to 39-gauge, in which division there is more really obsolete and nearly-worn-out machinery than of any other gauge in use. This situation existed at a time when jobbers were able to buy a fairly good type of 39 gauge stocking for $4.25 a dozen, and less for somewhat inferior goods, while purchasing 42-gauge at $4.50 to $4.75 a dozen. More of the 39-gauge machinery doubtless will be out of the running a year hence because of age and this may apply, in some measure, to 42-gauge equipment. There will be no replacement of the 39-gauge.

Machine builders, generally, in both the full-fashioned and seamless division, tell of slack business still in new equipment, although there is developing more interest in installation of the modern. There continues a considerable business for the machine manufacturer in the way of attachments and parts for revitalizing old seamless equipment, but in both divisions, it is stated, the pendulum is swinging to new equipment while receding from parts and attachments for keeping old machines in service.

The Underwear Situation

Tardiness of wholesale distributors of knit underwear in the matter of placing duplicate orders for winter weights caused a slowing down in the primary markets in June, after a slight spurt in trading had encouraged the trade to feel that the industry was headed toward a brisk summer. It was thought announcement by the large southern mills promptly after the supreme court decision of May 27 which ruled trade codes as no longer effective, that the NRA breakdown would result in no price competition, would have the effect of stimulating buyers to action.

There is no doubt that more orders have been booked by reason of the thoughtfulness of manufacturers in indicating their stand toward the loophole that was opened by the court ruling than if they had remained silent. But there were other considerations to be disposed of, to put distribution on a seasonal normal scale. There lingered doubt as to the fate of the cotton processing tax and the proposal for a similar tax on wool. And above all as a factor in the quiet underwear market was the fear that some time might elapse before industrial and merchandising plans might be adjusted to operating voluntary under recent code provisions.

It was to be assumed that, in the circumstances, price lists in effect to May 27 would undergo no downward revision. There were reports, as always when there is afforded opportunity for depressing markets, that a few manufacturers had offered to accept business at a shading of ruling prices. There were reported also a few cancellations, which it was thought by some interests were but a part of a program for bearing prices or procuring rebates from maturing invoices. It was significant that even the wildest rumors caused no unusual excitement in the trade and that, as a general proposition, prices remained firm. It is stated there was no interruption in the business coming from chain store organizations and catalog houses, two major outlets for knitted underwear. It appears that the Underwear Institute is an effectively cohesive body and that it has succeeded in marked extent in maintaining a fairly satisfactory market poise.

While there has been heard some disappointment with the fall business that was booked to the beginning of June, it appeared the sentiment among primary market selling agents that prices set for fall would hold. A break, at a sacrifice of the narrow margin of profit for manufacturers, it was believed, would cause some little demoralization, rather than give start to a buying movement. No one doubts, from the present perspective, that price steadiness pending the return of buyers to the markets for the remainder of their fall goods is necessary for averting confusion later in the year.

Up-state Pennsylvania manufacturers of women's cotton underthings seem to be as much affected by the shift from effective codes to a possible codeless period as are manufacturers and distributors of heavy weight cottons. There is a day-to-day small business in women's summer weights, the volume being reported as so thin as to be unprofitable.

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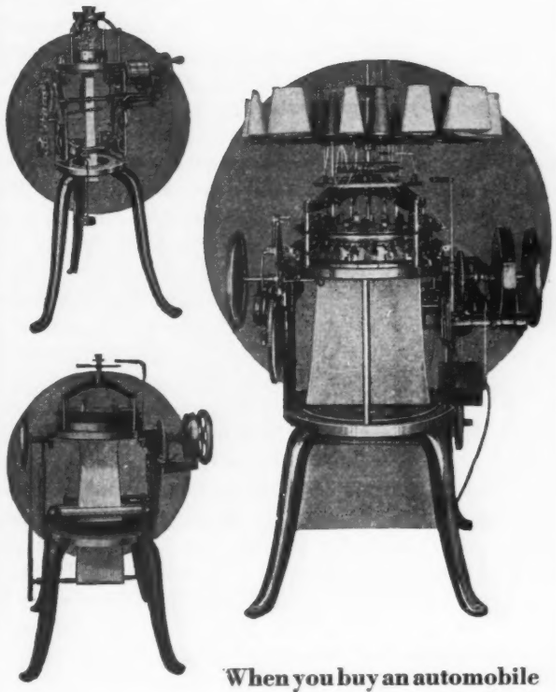

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REVIEW OF THE YARN MARKET

Philadelphia, Pa., June 17, 1935.

A CONSIDERABLE business in cotton yarns may be reasonably assumed to have started piling up from the day the Supreme Court removed the code sales regulations. For several weeks in May inquiries were of a character indicating weavers and spinners contemplated purchasing fair weights of yarns in anticipation of what still is being looked forward to as a busy fall session for spinners and consumers of yarn. Interest sagged from the time business was left to wonder what might be the ultimate effect on currently placed contracts, and buyers leaned backward in establishing, and since maintaining, an attitude of safety as to entanglements and taking a chance on buying at favorable prices when necessary to protect their requirements.

The Philadelphia cotton yarn trade probably never had experienced a market so devoid of interest and lacking in action as in the weeks following May 27. As June wore on and a skeleton NRA Act intended to be effective until April, 1936, finally was enacted, inquiry was revived and an increase in light sales for spot were noted. It was developing demand rather than the stop-gap legislation that actuated buyers. No material increase in the movement of yarn was looked for until traders got on their feet after a wallowing in a mire of uncertainty for weeks.

Fluctuations, though in a narrow range, had the effect of contributing to the continuation of the market quiet. Yarn prices, however, remained relatively firm throughout the trying period when sellers were not pushing for business and buyers not pestering them with requests for quotations and a shading therefrom. By the middle of June there were intimations of a willingness to contract for deliveries through July, but for very conservative quantities.

Single carded on cones was quoted in a range 26 to 27 cents for 10s, and some little business was placed at varying figures in that range. As some sales were made at 26½, it was doubted that buyers paid more in any instance except for super-carded quality or yarns of some given origin held in highest repute by a consuming element. Quotations ran as high as 28 cents on extra choice threads.

There was but little fluctuation in quotations on carded yarn during a period of some weeks. Knitters seemed to have covered in excess of requirements as they became known, and some of the larger users were out of the market at a time when ordinarily they should have been watching for an opening. Underwear yarns in particular were lagging, especially as related to carded numbers, while single combed peeler suffered some in price recessions.

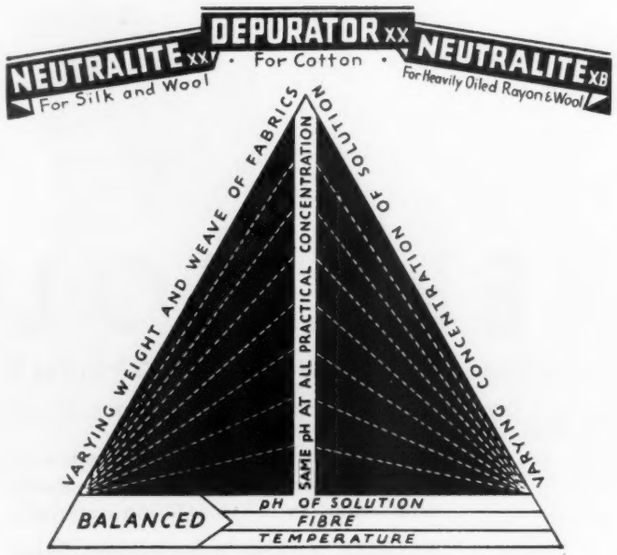
Carded weaving yarns were regarded fairly quoted at 30 cents for 20s/2, warps, some spinners holding tightly for a half cent more. In the 30s/2 bracket, warps, sales were effected during the first half of June at 34 to 34½ cents. Demand for weaving yarns fluctuated, running very low at times. Buyers were careful to have it written in their order acceptances and contracts that in the event of the cotton processing tax being discontinued their invoices will be adjusted accordingly.

The effect of the Supreme Court ruling on the NRA on yarn shipments is indicated in an official statistical bulletin relating to combed peeler yarns. For the week ending June 1, which included five days after the NRA had been ruled out and one day while it still was functioning, the ratio of sales of singles to output was 18.9 per cent, compared with 58.3 per cent in the week ending March 23 as the previous low since January 1. Sales of single combed in the week ending June 1 were recorded as 89,847 pounds. The previous low since January was 396,699 pounds, in the week ending March 16, and the highest in that period was 592,505 pounds, in the week of April 13. In ply combed yarns the ratio of sales to production during the week ending June 1 was 37.4 per cent, compared with 45 per cent as previous low for the year.

Single combed peeler yarns ran off in price during the first half of June, according to reports of sales consummated on a basis of 39 cents for 30s, by spinners who had been holding for 40 cents for weeks when competitors were accepting a half to one cent less. The Philadelphia yarn trade is virtually unanimous in forecasts of a satisfactory volume of business coming through for consumption in the fall months and later. On the theory that a shading of quotations would not stimulate sales, except for small spot lots, yarn merchants are supporting spinners in efforts at price maintenance for a possible few remaining weeks of buyers waiting for sellers to weaken.

Demand for mercerized yarns declined sharply following the start of curtailing production of hosiery, and the recession became more pronounced following the High Court NRA ruling. Quotations remained practically unchanged, but there were trustworthy reports of a working down to a trading price when the pressure for order became somewhat strained. Quotations in mid-June were on a basis of about 68-70 cents for 60s/2.

Worsted yarn spinners have had a more difficult problem in striving to establish price stability. Late trustworthy reports were to the effect that quotations on fine yarns were in a range of 12 to 15 cents a pound. In one instance it amounted to 18 cents—one spinner holding for $1.95 a pound and losing an order to a rival quoting $1.77. Consumption of worsted weaving yarns is at a fair stage, some spinners being quite well engaged in shipping against low price orders. The test of the worsted yarn market will come probably in July or early August when spinners and yarn consumers will have to establish prices on a parity with raw wool cost, in which there has been a 25 per cent increase in medium wools popular for production of knitting yarns.



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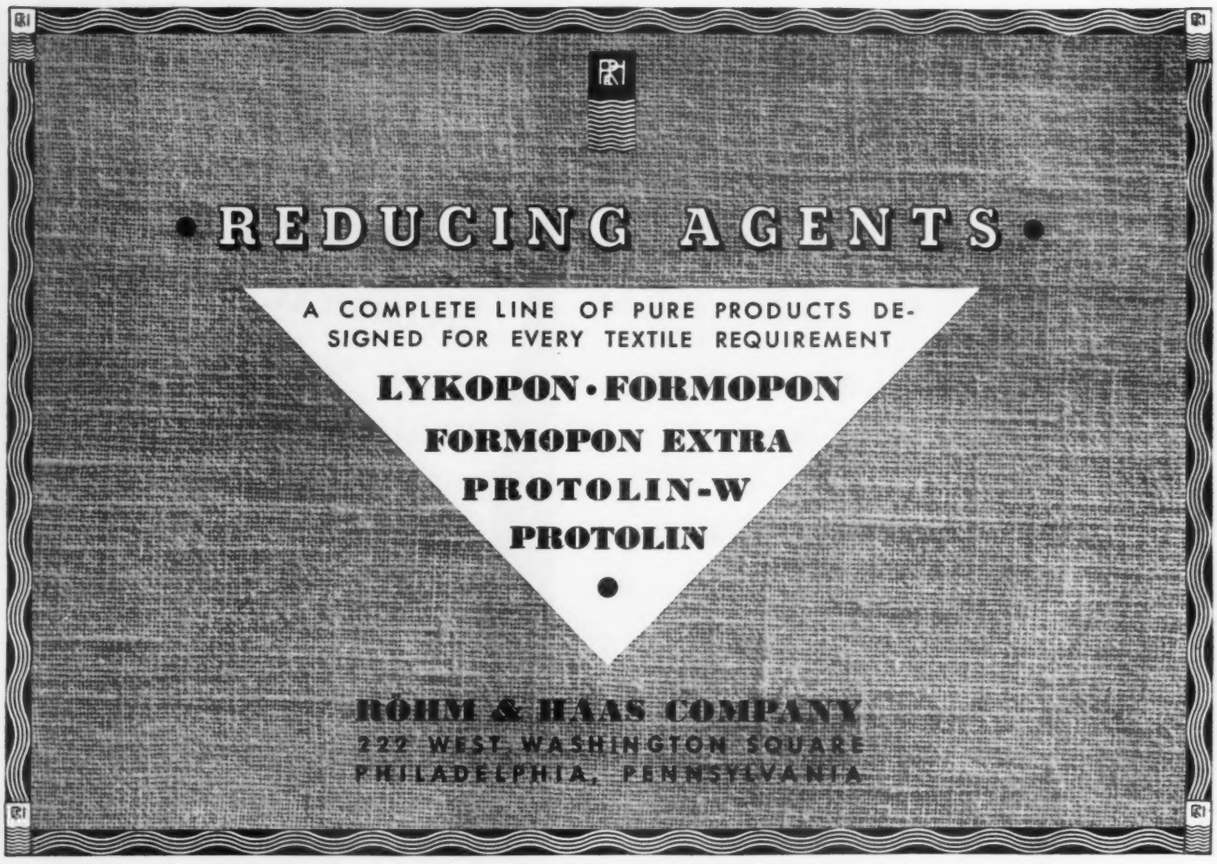

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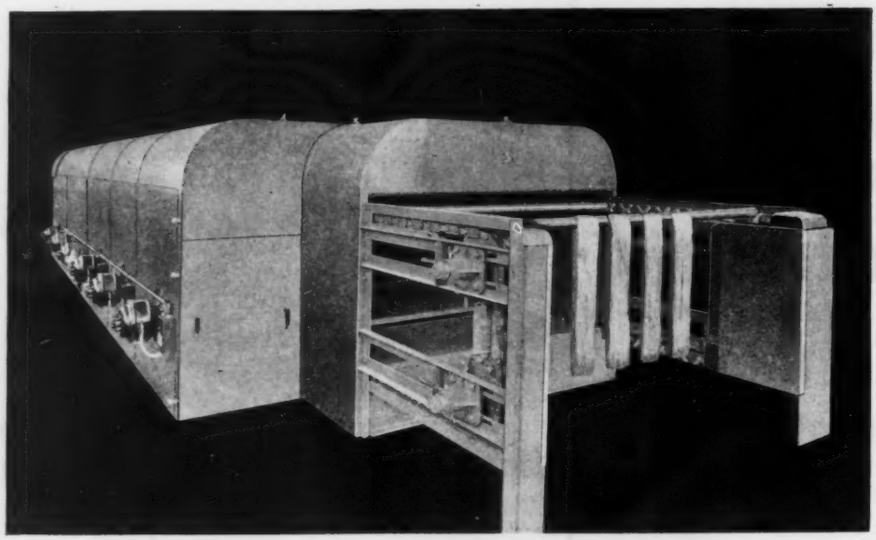

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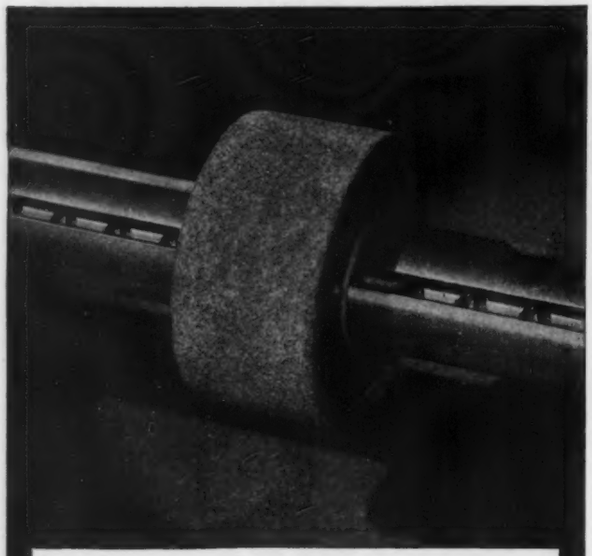

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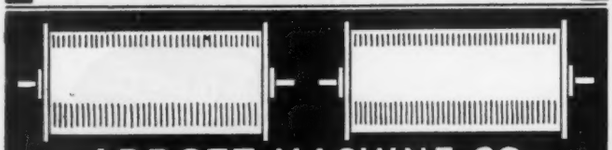

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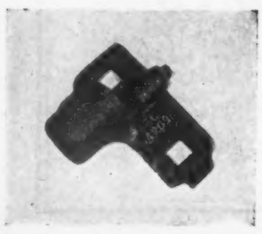

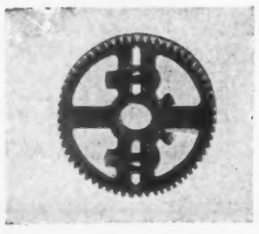

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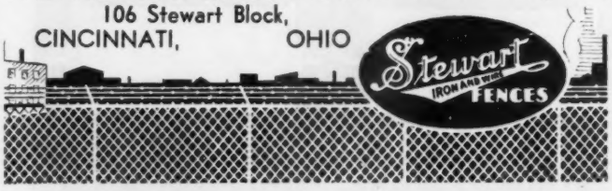

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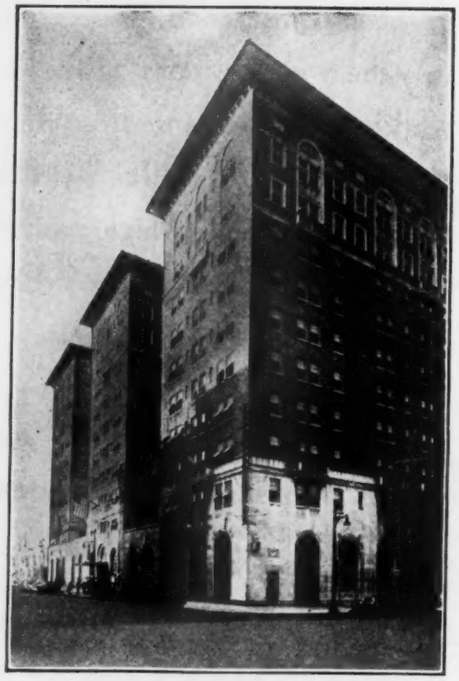

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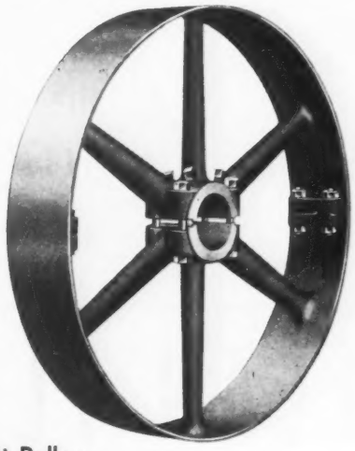

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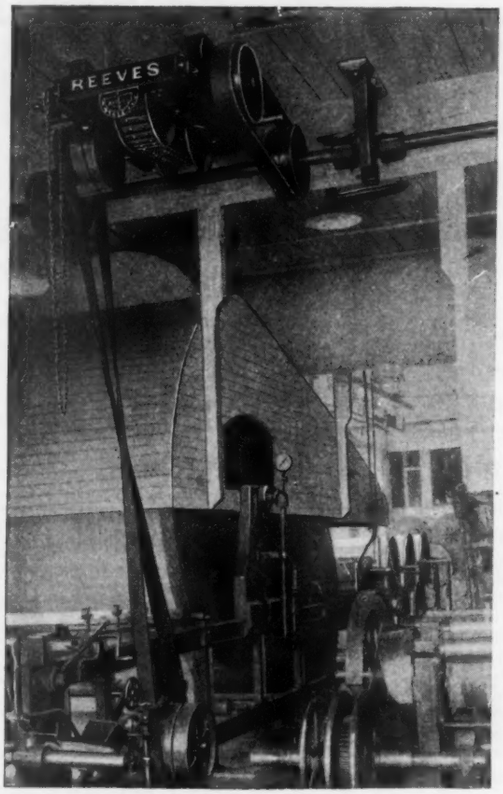

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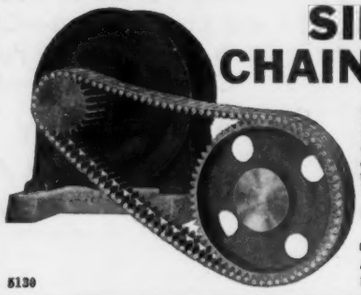

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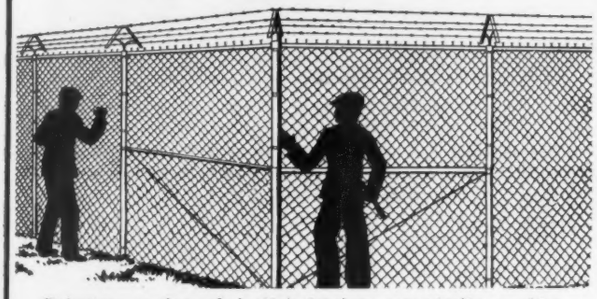

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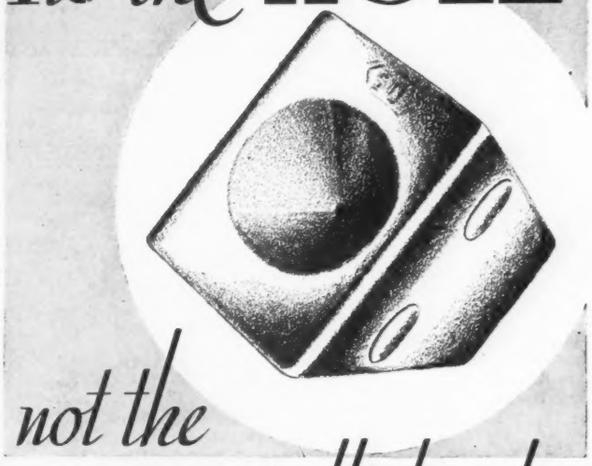

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